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ABSTRACT

After briefly summarizing major policy concerns and different perspectives on the relationship between training and work, this report discusses three main modes of vocational training: school-based training, apprenticeship, and training of employees. The goals and ideologies connected with these modes and the national systems that exemplify them are discussed; the way training is conducted is described; recent policy trends are noted; and some strengths and weaknesses are assessed--including the extent to which training later leads to "relevant work." The modes and their respective cases are compared and present international trends and policy options are discussed. For each mode, a national case is presented: Sweden, Germany, and Japan respectively. Each country can be seen as a case in which one of these modes is relatively highly developed, with the caution that appropriate policies in any country will depend on the national context. The accounts are intended to highlight some of the problems that still persist when a given mode is developed under what is widely perceived internationally to have been relatively favorable circumstances. Contains 83 references. (KC)

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IIEP research and studies programme

The development of human resources:

New trends in technical and vocational education

Vocational training: analysis of policy and modes

Case studies of Sweden, Germany and Japan

Jon Lauglo

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Vocational training: analysis of policy and modes

Case studies of Sweden, Germany and Japan

Jon Lauglo

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Chapter 1
Introduction

1.1 Defining vocational training

Vocational training refers to deliberately organized measures to bring about learning as preparation for work tasks in designated occupations or clusters of kindred occupations. As such, it implicitly aims to improve the productivity of labour. Traditionally, the term applies to preparation for crafts and skilled industrial work, below 'technician' level. Such preparation is also the main concern in this study. A secondary concern is with training for skilled work in commerce and the public services. The scope of the present study[*] does not include those occupations for which a complete academic secondary schooling is usually a minimum entrance requirement.

Conceptually 'vocational *education*' differs slightly from 'vocational *training*'. In addition to mastery of vocational skills, it aims to provide general education. But 'training' too may stress traits which are of purported transfer value in other situations than the targeted occupational tasks – e.g. a culture of workmanship, the importance of doing a job properly. If there is a distinction, 'training' is more exclusively concerned with work tasks and work situations – even in its general education aims. This is one reason why 'training' is more agreeable to those who stress the aim of improving labour productivity, whilst 'vocational education' tends to be the term favoured by those who stress a wider range of human development values. However, in terms of acquisition of work skills, 'training' is the more inclusive term in that it not only refers to comprehensive preparation for 'whole' occupations but also to more discrete instructional activities of very short duration, for those who are already employed in an occupation.

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[*] Some sections in this study draw on papers previously published or in press (Lauglo, 1992a; 1992b and 1992c).

Thus, brief on-the-job instruction of auto mechanics in the maintenance of a new type of carburettor is probably more aptly described as 'training' than as 'vocational education'. 'Training', more so than 'education', is associated with wider goals external to the learner: there are skills and knowledge to be acquired and attendant attitudes to be transmitted.

1.2 The aims of the study

The aims of this study are fourfold:

(1) to comment on some general problems confronting policy making for vocational training, internationally, and the main perspectives on the relationship between training and the labour market;
(2) to describe characteristics of different main modes of organizing vocational training, their rationales, and some of the commonly noted advantages and problems that these modes have;
(3) to describe and compare the country cases of Sweden, Germany and Japan as examples of advanced versions of their respective modes;
(4) to comment on policy trends and choices.

It would be naive to assume that decisions of training policy in any country can or should be directly influenced by research generated 'lessons' from other countries. Therefore, the present study does not purport to provide any categoric 'lessons' for decision-makers. Policy decisions are too complex, too context dependent, and too inherently political, for any such simple application of 'lessons' to occur – let alone be a recommended procedure. But comparative research can be informative as 'background' for decisions, by pointing to internationally common strengths and weaknesses in different ways of organizing training in other countries deemed similar to one's own, and also by examining how internationally influential 'models' work in their home base and the prerequisites which they seem to have.

Developing countries are culturally and politically diverse, but they share economic characteristics and circumstances of external dependence which set them apart from industrially advanced countries, influencing the condition of vocational training. However, there are many problems of vocational training which transcend the divide between rich and poor countries, though these problems will be worse, and the resources available to deal with them less, in the latter group of countries. Certain policy trends also tend to cut across developmental divides. Further, the systems of the North – though not easily transplantable to the South – influence the evolution of vocational training in the South. Thus, there is a case for a more global perspective on training policies rather than merely looking separately at industrially advanced countries and developing countries.

1.3 Policy concerns

Improved *external effectiveness* must be a prime concern for training policies. Some key questions are: how well does training prepare for the occupations concerned; and does it in fact lead to these occupations? How much does it improve the productivity of persons who have been trained, in these occupations (or if the argument is that skills are transferable, in other occupations than the one for which training purports to prepare)? With the need to make the best use of scarce resources – vocational training usually has high unit costs – one is also naturally concerned with cost and with *external efficiency*, in so far as this is measurable.[1]

The conventional wisdom is that external effectiveness is better in those modes of training which, at least in part, are based in the world of work itself. But labour market conditions affect the external effectiveness of *any* mode; and the external effectiveness remains problematic even in countries which are reputed to have highly 'advanced' apprenticeship systems (*Chapter 2, Section 2.2.1 page 36*). The access to jobs that training provides will in any case depend on the reputation of training;

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[1] It should be recognized that 'efficiency', as a *total system condition* in education and training probably eludes valid measurement by any single indicator. It is only possible to gauge certain aspects of costs and outputs – incomplete indicators of cost effectiveness, let alone efficiency. In attempts to evaluate efficiency in education and training one is thus only engaged in an incomplete mapping – in reducing the extent of ignorance – with the inevitable risks of attaching excessive importance to what can be measured, when judgements are made about the state of the system examined. But it can be useful to know, e.g. that one mode of training is 'at least twice as costly' as an alternative mode. The unknown benefits of the former must then be at least twice as high too, for the former mode to be preferable.

and job performance will depend on the skills acquired. Thus, the external effectiveness of training will also depend on its internal effectiveness.

Internal effectiveness is simply the success, during training, in facilitating learning of the intended skills, knowledge and attitudes – regardless of its later application. There is also a need to make optimal use of scarce resources in bringing such learning about – the wider notion of *internal efficiency*. Certain constraints on internal efficiency are very common throughout the world: inadequate recruitment of suitable trainees, staffing inadequacies, high costs, complex equipment/materials requirements, poor curriculum and course design, and high management complexity.

Policies on vocational training are not only motivated by the goal of 'improved productivity of labour' and of meeting effective demands which employers have for skilled workers. Combatting school leaver unemployment and meeting 'social demand' for education and training opportunities are also important policy considerations. This means that there is a politically-inbuilt tendency to develop large-scale institutional training by thin stretching of available resources, in the hope that a supply of trained people will generate its own demand – with adverse effects on the external efficiency of training when the acquired skills are not used. Especially in low-income countries, the pressure to 'go to scale' brings the risk that resources will be spread so thinly that the training provided as preparation for the jobs available will lack credibility – e.g. introduction throughout the school system of a few weekly hours of 'prevocational subjects' as a remedy for school leaver unemployment, or a system of post-primary skill centres without tools, materials, or competent instructors.

The political goal of distributing training opportunity widely and equitably as well as the unofficial pressure in some countries to give favoured access to well-connected applicants, are both conditions which make it more difficult to recruit those with some prior connection with, and real aspiration for, the trade concerned. Also, when vocational training is unattractive to youth[2], it can become a rather demoralized 'waiting room' filled with trainees looking for the first available opportunity to re-enter the 'academic' ladder, without much interest in the trade they are taught.

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[2] This will depend on their access to alternative educational routes and on the structure of economic opportunity to which these routes lead, as well as on the 'quality' that training is reputed to have.

Competent teachers with relevant experience from industry or trade are difficult to recruit, train, and keep. Especially in low-income countries, it is difficult to recruit teachers with relevant industrial experience. Pay and other incentives are crucial for attracting and retaining good teachers. Compared to their usually more highly paid academic colleagues, competent vocational teachers may more easily find alternative and better paid employment in their trade, outside of teaching. Paradoxically, the very conditions which improve the external efficiency of training (the chance that skills are well utilized after training) can adversely affect its internal efficiency because a favourable labour market can drain good teachers away. The easier trainees find work, the harder it is also to keep the vocational teachers from leaving to take up better paid alternative employment in their trade. It highlights the importance of due regard to incentives when attempts are made to boost teacher morale through 'institutional development' measures.

There are special problems of curriculum and course design. Compared to general education, the trade specialties usually lack status. Further, they lack visibility because of small scale. Their support systems will therefore be more poorly developed – weak advisers/inspectors, examination and testing expertise, materials and curriculum development. Curriculum development work is often of distinctly low quality. In many countries most vocational trades are taught without textbooks or teaching guides. The need for renewal of courses and syllabuses is probably greater in vocational subjects than in academic ones, in order to keep up with changing labour market conditions and work requirements. But research and development work on vocational training is usually weakly institutionalized. From a university base, only few researchers take an interest in this area – one reason is that they very rarely have any experience of it themselves.

Vocational subjects usually have high development costs (per trainee place) and high unit recurrent costs (Cumming, 1988). The more sophisticated the technology taught, the more expensive the needed equipment and materials will usually be. The high cost of equipment makes it difficult to keep up with changing technology. Often groups of less than 16 are taught in a training workshop. Instructor-trainee ratios of 1:7 are not unusual. This drives up unit teaching costs greatly in comparison with 'chalk-and-talk' subjects. Non-teaching recurrent costs for consumables and spare parts tend to be much higher than expenses for materials in academic subjects. When recurrent budgets are squeezed severely – this is invariably the case in developing countries – teachers' pay takes precedence over other recurrent expenses, leaving workshops without adequate basic supplies. Donor-financed training facilities often suffer from inadequate planning in the crucial long-term need for spares, materials and consumables. The high cost is an argument for concentration in order to benefit from economies of scale, rather than spreading resources thinly on many locations. It is also an argument for shifting training responsibility to employers, to save expenses from public coffers, and to use for training purposes the staff and equipment already in place for production. The question is how best to induce employers to shoulder greater training responsibility.

In order to recoup costs, to provide extra incentives for staff and trainees, and also help to bridge the gap between theory and practice, many countries have experimented in training institutions with the manufacture of products for sale. As a means of generating income, the success stories have been few and shortlived for the skills required to develop and sustain such 'training with production' are very scarce. One would expect that the 'product' which a training institution is best equipped to 'sell' is training itself rather than physical products. In recent years, numerous attempts have in fact been made in industrialized countries to develop such 'sale of courses' to institutional 'customers'. A comparative study of these efforts is yet to be made. But what is clear is that even in countries with fairly well-equipped schools and relatively well-qualified staff, it is a very demanding management task to retool as an entrepreneurial outfit when a school is used to having a stable supply of funding and trainees for its regular courses.

1.4 The connection between training and work

General perspectives on economic development and on the labour market have implications for vocational training policies. On the one hand, faith in macro-economic planning encourages training policies derived from forecasts of manpower requirements. This can serve as a rationale for public provision of strongly specialized training. On the other hand, faith in the market mechanism can serve as a rationale for private training provisions, for 'flexibility' in public provisions, and for using cost-effectiveness analysis in assessing the performance of training provisions. Manpower planning and cost-effectiveness analysis may therefore seem to be opposed approaches, but there is now increased recognition that they are complementary planning tools (Psacharopoulos and Woodhall, 1985). A third perspective is labour market segmentation theory which argues the case for looking separately at different labour market segments.

Manpower planning usually means, first, that certain sectoral economic growth rates are assumed as reachable targets. The output of training institutions is then planned to meet the requirements which are derived from these targets, taking account of existing stocks of manpower and rates of 'wastage'. Forecasts are made of future requirements as to speciality and level of skill. Thus, the approach assumes that the distribution of labour requirements by occupation and skill level can be well predicted.

A combination of macro-economic planning – with manpower planning as a derivative of it – and highly specialized vocational training (ideally based upon a foundation of pre-vocational polytechnical education) has characterized socialist countries. But western market economies with a strong centralist tradition (e.g. France) have also devoted much attention to manpower planning. It was a major concept in the activities of the OECD in the 1960s.

Manpower planning has also been a common feature in development plans in low-income countries.[3] Manpower planning, and the less direct forecasting of manpower requirements, have well-known difficulties. The development of economies cannot be forecast, let alone planned, with sufficient precision; and there is more substitutability between different productive inputs and types of labour than the planners and forecasters typically assume. Detailed forecasts of manpower requirements are therefore notoriously unreliable. Further, the present worldwide squeeze on public finance highlights the need to examine the economic value of training in relation to its cost.

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[3] 'Requiring planning' seems to go with the greater need for accountability which inheres in grants or soft loans. Interestingly, just as the Marshall Aid from the US encouraged plans and surveys of trends and resources in Europe after World War II, so donors have encouraged governments of developing countries to formulate national education plans, and manpower plans, regardless of the home practice of donor governments.

Yet elements of manpower planning or forecasting continue in general use in spite of these deficiencies, for decisions need to be taken about training facilities and the scale of intake to different forms of training, in advance of labour market entry (or re-entry) of those who are to be trained. The longer the duration of training, the more inevitable is the need to plan ahead of effective demand in the labour market. To make such decisions, some estimate of future manpower demand is surely needed. But estimates will be more realistic when the time horizon is short. It is therefore crucial that estimates be continually adjusted by labour-market monitoring. But because development plans are political responses to urgent needs, they unfortunately have a built-in impetus to be unrealistically optimistic about reachable targets.

A common justification for increased vocational training is to build up a supply of skilled manpower in readiness for 'planned' industrialization or economic upturn. Such policies have been pursued by socialist governments in connection with industrialization drives (as in Tanzania), but also by free-marketeers in anticipation of economic upturns (e.g. the Thatcher Government in the UK). If demand eventually increases, this approach will seem to be vindicated. But the longer the wait, the stronger will be the disillusionment.

Transferability of skills across specialties becomes important in training for uncertain labour market conditions. 'Supply' policies for training will be less realistic if the planning period is 'long' and if it is assumed that drastic change can occur in a country's technological and economic structure during that period. Thus, there are strong arguments for short-term planning based on close monitoring of the most recent trends, and for 'rolling' revision of the forecasts made.

Apart from serving as a basis for decisions on the scale of training, the manpower planning approach reinforces two structural features in training: 1) an emphasis on separately institutionalized training rather than employment-based provisions because separate institutionalization is more amenable to government planning; 2) narrow training specialties, based on the assumption that not only can the demand for skills be forecast, but that even highly specialized job openings will be filled by those who have been formally trained.

These two features, which characterized training policies in the erstwhile socialist countries in Eastern Europe, have in recent years been increasingly criticized. Neo-classical economic theory asserts that the market mechanism is superior to government planning. In keeping with a limited role for government – 'a lean state' – this perspective supports private training. This has two aspects: private training institutions (e.g. proprietary schools) and training organized by employers.

In this perspective, economic growth results from the competitive adjustments and innovations which producers make in response to market forces. The optimal mix of different kinds of labour will vary, depending on price and technology. The scale and kind of future occupation-specific skill requirements are then viewed as fairly unpredictable. This view gives priority to knowledge, skills, and attitudes which are useful for learning new tasks and which can be applied across a variety of economic roles, 'portable skills' in Bowman's words (1988). Hence a tendency to see a good general education as the best vocational training that schools can offer, as produced general 'trainability', whilst vocational training in the occupation-specific sense must be provided in close association with the workplace.

But there is uncertainty about what the ingredients should be in such 'education for trainability'. Is it simply grounding in literacy and numeracy? Science? Pre-vocational subjects that relate to broad occupational 'families'?[4] A 'practical approach' to the teaching of any subject? Stress on moral education – perhaps even religious or political education to instil integrity, discipline, willingness to work hard? These categories may vary as to expense and ease of implementation. It is also sometimes argued that in-depth vocational training which is clearly geared towards a specific occupation, transmits transferable values, attitudes and skills so that, paradoxically, *specialized training becomes a kind of general education.*

Research as to which aspect of 'general education' actually makes people more trainable is very sparse. But employers' *opinions* are better mapped. Employers generally prefer: good practical communication and computation skills, reliability, punctuality, willingness to 'work hard'.

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[4] Such pre-vocational 'practical subjects' have been promoted in many countries, but they are no cheap and easy solution (Lauglo and Lillis (1988)).

These are the findings which typically are obtained by research in both industrialized countries and developing countries when employers are asked what they 'want from school' or what they look for when new staff are hired (Oxenham, 1988; Noah and Eckstein, 1988). Employers also complain that school leavers all too often lack these traits. But regardless of what they might feel reasonable to expect from *schools*, employers will surely have additional specifics of specialized skill in mind when they hire workers for skilled jobs. Manpower planners may well tend to overestimate the need for extended pre-employment training for entry-level jobs (Dougherty, 1989, Section 8.3); but it is also true that many occupations have quite specialized skill prerequisites. To leave such specifics to training on the job would be a romantic view of the training potential of most workplaces.

Cost-benefit analysis as a planning tool is closely associated with faith in the market. It assumes that pay reflects the marginal productivity of labour. The value of vocational training is then best measured by the additional income stream accruing to former trainees as compared to the direct and indirect cost of their training. Internal rate-of-return analysis, used to calculate both private and social rates of return to investments in training, exemplify this approach. A well-known application is Psacharopoulos and Loxley's (1985) research in Colombia and Tanzania which showed low returns to investment in vocationally oriented streams within mainstream secondary schools. They also found that a vocational course, rather than only general education subjects, conferred no advantage in finding any kind of job – food for thought also for those who reject the assumptions of cost-benefit analysis.

The main arguments against rate-of-return analysis is that salaries and wages are poor measures of benefit to society, that the data on life-income streams used in these calculations are often a mix of many cohorts, and that benefits accrued over many years in the past are a doubtful predictor of future conditions. Whilst manpower forecasting rightly stands accused of inaccurate projections of skill requirements, rate-of-return analysis can be accused of projecting into the future dubious measures of past streams of contributions to the national economy.

A third major perspective, labour market segmentation theory, makes the case for more microscopic analysis focused on particular occupations by asserting that the labour market is segmented by *i.a.*, recruitment procedures, the importance of education/training for selection, and by styles of training associated with each segment. To understand the form that vocational training takes and its role in the labour market, it is therefore necessary to look at segments separately.

The most widely used concept of segmentation is the contrast between the 'modern', the 'informal', and the 'traditional' sectors in developing countries. But the notion of segments is also applied to different occupational groupings within industrialized countries. It is argued that the importance which training/education credentials have for economic life chances varies among such segments. A segmentation perspective can be (but need not be) derived from the thesis that education and training serve the vested interests of oligarchic groups which dominate politically and economically (Carnoy, 1980). A main assertion has been that schools transmit values of docility and obedience to those destined for subordinate economic roles; whilst educational institutions attended by the future managers and professionals place more emphasis on independent thought and action. Thus, future bosses and professionals are taught in a style which encourages more independent judgement and 'problem solving', whilst future workers are taught precision in 'working to blueprints'.

It used to be claimed that educational credentials play an especially important part in selection to modern sector jobs in developing countries. If this were generally true, it would strengthen the case for school-based training, because access to jobs would then depend on certificates. But this 'credentialist' thesis is now questioned – especially for skilled manual work. A study by Caillods and Briones (1981) of Colombian industrial firms shows the differential importance of credentials. In general, they found but a loose connection between formal technical/vocational training and labour market destination. But the importance of credentials from schools and training differed among the occupational levels in the companies. Education was the main criterion for recruiting managerial staff, but educational credentials were less important in recruiting technicians – priority was not always given to graduates from technical schools. And formal credentials were clearly not the main criterion for employing skilled workers. Skilled workers were trained mainly on the job, and were presumably hired through internal promotions or connections.

The importance of credentials for access to jobs will also depend on how sharp the competition is. Competition can change over time as, e.g., the market can become glutted with 'qualified' applicants. Oxenham (1984) observes, based on impressions and reviews of research in a number of countries, that 'the greater the competition for employment, the greater is the importance of social connections in addition to social background and education' for access to jobs. It has been shown that doing well in school (or just passing the exam) conferred no particular advantage in the quest for jobs among leavers from lower secondary schools in Kenya (Lauglo and Närman, 1987). There are similar findings for Kenyan technical secondary schools (Lauglo, 1989). But interestingly, research by Kinyanjui (1974) shows that doing well in secondary school clearly did give an advantage in the Kenyan labour market of the early 1970s – *before* the market became glutted with secondary school leavers.

In an extremely depressed labour market – this is now the rule for school leavers in developing countries – it is likely that other factors than credentials from education and training come into play in the competition for paid employment. In particular, pre-employment school-based training is likely to be very loosely connected with subsequent 'relevant' work under such conditions. In the study of Kenyan technical secondary school leavers (Närman, 1988a) one year after the final exam, only 15 per cent had found work or further training of a broadly technical type – and then only rarely in their trade of specialization. The technical secondary schools were initially conceived as preparation for 'formal' apprenticeships. But not a single trainee (out of a sample of 480) had obtained an apprenticeship within one year. However, in Botswana, with a much less difficult labour market for young job seekers, the trainees from the Botswana brigades (also pre-employment training without any placement in industry or apprenticeship) are fairly easily absorbed into their trade of specialization (Närman *et al.*, 1988).

Loose articulation can also occur under buoyant labour market conditions, but then because workers are more able to move out of the occupations for which they have been trained in pursuit of better pay and working conditions. Vassnes (1980) showed in a nine-year tracer study of former vocational school students in Norway that only one-quarter were in the trade they had been trained for; one-third of them said they hardly made any use of their training at all. Research reported by the Swedish National Board of Education (1975) showed very similar results for Sweden. One can speculate that the loosest relationships between training and subsequent career are found in extremely depressed *and* in extremely buoyant labour markets but for different reasons: in the former, trainees lack access to jobs in their trade, in the latter case they have the access but find better opportunities elsewhere, perhaps after some initial experience in their trade.

In any country there is a positive correlation between pay and level of education for the labour force as a whole. But this is not an impressively tight association; and it does not mean that credentials always give an advantage in the labour market. Employers can even discriminate against 'overeducated' or 'overqualified' applicants. Oxenham (1984) refers to the Finniston Report of 1980 which showed for Britain that many employers, particularly smaller ones, are prejudiced against the more educated applicants. Lehmann and Verhine (1982) reported that for blue-collar skilled work, Brazilian employers did not seem to take scholastic education into account and may view better educated applicants as 'overqualified', preferring instead to keep close to the minimum qualifications.

To be sure, employers will look for good skills for the kind of work which needs to be done and within the pay range they think appropriate; but they will also suspect qualifications which could make a worker restive in the job, impatient for quick promotion or otherwise less motivated than those with humbler credentials. Such considerations may be especially important for jobs which are on a very constricted career ladder; and many manual jobs are of this kind. It is a common impression in Kenya that employers in the private sector are sceptical of school-based vocational training. Instead, for skilled manual labour, they are said to prefer cheaper employees who have been trained on the job and who have already proven their reliability. It could be that when they do recruit from institutionalized training, they prefer the Kenya National Youth Service whose training has been clearly focused on trade skills, with army-like emphasis on drill and discipline. Kukler (1987) showed high absorption of such trainees into their respective trades – in contrast to the bleak prospects of technical secondary school leavers (Närman, 1988b) – even after three years of job search.

A major lesson from research on connections between training and the labour market is that training must be planned with close attention to recruitment and promotion processes in the particular labour market segment for which it is intended. Clearly, the connection between training and jobs is problematic. It is simply not sufficient to identify skills and forecast the demand for labour. One cannot assume that a training provision will dominate the supply to the occupations for which it is intended. In many occupations, there is much on-the-job learning which can lead to promotion into more skilled jobs without formalized training; and marketable specialist skills are not only acquired in the 'education system'.

Thus it may be that a given type of training turns out to be recognized as a good preparation for a job it has not been intended for.

These relationships need to be monitored. One needs to find out what happens to trainees after training and the implications of skill utilization. Equally, one needs to examine how the 'target jobs' are filled, the process of recruitment to the occupations concerned and what employers are looking for. In some conditions, employers may not even primarily screen on 'skills'. The question may rather be whether those candidates to whom the employer has some kind of obligation, can measure up to minimum skill requirements. When jobs are scarce, they can become a life-line to kith and kin, rewards to valued employees who sponsor the newcomers, or a tribute to persons of influence on whose goodwill an employer depends.

Chapter 2

Modes of training

International comparisons of the pros and cons of different ways of organizing training are constrained by the fact that national systems have multiple characteristics and do not conform to any single pure type. Further, even if structural features of training systems could be transplanted, they function in a non-transplantable context. Therefore, whilst comparisons are aided by a typology, they also require illustrative case studies. The discussion below shows three contrasting modes in terms of the locus of training, in particular its degree of institutional separation from the institutional mainstream of the education system, or – at the other end – from the flow of productive work.[5] The opposite poles are then: training which occurs in comprehensive secondary school versus training which is fully encapsulated within regular employment. In between lie specialized trade schools, and apprenticeship.

For each mode, a national case will be discussed. Each case is chosen so as to constitute a relatively 'pure' and advanced form of the mode concerned. The intent is not to hold up for emulation any 'one best mode'. In fact, comparative analysis often shows that systems which from a distance seem admirable, have their warts and blemishes too, when looked at more closely.

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[5] Other classifications exist. De Moura Castro and Alfthan (1992) also distinguishes between apprenticeship and the training which industry conducts for its own employees. In addition he points to school-based types: the arts and crafts schools, the vocational schools, and the comprehensive high school. Greinert (1992:2-15) uses the extent of state involvement as his criterion and proposes three types: Model 1 – the state has at most only a marginal degree of involvement; Model 2 – the state alone plans, organizes and controls vocational training; and Model 3 – the state provides a comprehensive framework within which private companies and private institutional training act as the providers of training. A multiple criterion classification could usefully be attempted in a more comprehensive approach than the one attempted here. In addition to the role of public authorities, and the extent of institutional separateness from the flow of work, one might also consider whether the training is intended to occur before, during, or after a period of employment/self-employment.

The three countries chosen for the case-study are all industrially highly advanced with a strong and export-oriented manufacturing base. Their annual growth rates in real GDP/GNP during 1980-88 were respectively 2.1 per cent (Sweden), 1.6 (Germany), and 4 per cent (Japan) (OECD, 1991a: 4).

2.1 School-based training

Depending on the balance in the curriculum between general education and vocational subjects, school-based training can be only of 'pre-vocational' character (e.g. Industrial Arts) or it can aim at entry-level skills (e.g., the vocational tracks in Swedish upper secondary schools). It is only the latter which can clearly be termed vocational training. Pre-vocational education is, strictly speaking, only a form of 'orientation' that purports to prepare for vocational training. But 'pre-vocational' subjects, and courses which are more clearly 'real training' often gain political support from the same need to address youth unemployment and make school-education appear more economically useful. Thus, it is widely hoped and expected that pre-vocational education, too, will give 'employable practical skills', so that pre-vocational subjects are often fraught with 'vocational' expectations. The failure of pre-vocational education to remedy youth unemployment is no indictment of the *general education* value of practical subjects. But as general education, they must be justified with a view to either intrinsic value or usefulness across a wide range of life situations. There are certainly important theoretical perspectives on general education (e.g, both pragmatism and poly-technical education) which support such practical subjects – regardless of whether they lead to related further training and eventual employment. Their cost and complexity should be assessed with such aims in mind (Lauglo and Lillis, 1988, Chapter 1) – not in relation to unrealistic objectives. But in countries with meagre resources for education and training, one should ask whether goals of practicality could not be more easily pursued within the conventional book subjects, rather than developing separate pre-vocational/practical subjects with all their cost and complexities. In this study, the concern is with training, rather than with the more modest 'pre-vocational' variety which is also found in schools.

School-based vocational training will typically occur prior to employment. It will usually include some general education subjects too. There may also be some supplementary 'work experience' through placement in industry. Usually, school-based training does not lead to any external system of trades tests – the exams are internal to the school system. One might identify three main variants: *vocational streams or courses in mainstream secondary schools*; *specialized technical or vocational secondary schools*; and *trade schools and training centres* which clearly are not 'secondary' in the sense of preparing for 'tertiary' or higher education. In the case of mainstream secondary schools, there is much further variation as to depth of training – even if one excludes the case of a few weekly class hours of 'practical' subjects.

One rationale for school-based training is that economies undergo structural and technological change, and that it is important that training be broad so as to prepare for such change. In the OECD countries, this was a fairly common argument in favour of school-based training in the late 1960s. A broad foundation also has appeal on egalitarian grounds because it reduces the distance between vocational training and general education. Accordingly, vocational *education* becomes the ideal, rather than the more narrowly defined 'training'. These arguments have, at least until recently carried weight in Nordic Social Democratic policies.

The World Bank has a strong influence on formulation of training policy in many developing countries, both because of its conditionalities for finance and its publicized analysis of project experience. In the early 1970s, vocational or pre-vocational subjects were a frequent conditionality of World Bank support to secondary education (Wright, 1988). Ironically, the reverse conditionality may now be applied – both to pre-vocational subjects and to more clearly vocational programmes which are lodged within mainstream secondary schools. Thus, 'diversified' secondary education is frowned upon in the Bank's (1991) policy paper on vocational education. Analysis of World Bank spending patterns shows decreasing spending on vocational training in secondary schools since the mid-1970s (Middleton, 1988). The problems with this mode seem to be especially severe in low-income countries; it has done better in middle-income countries (Middleton and Demsky, 1988). But the same may be said for other modes of training.

In response to mounting criticism of diversified secondary schools in developing countries, Hultin (1988) has re-stated the case for this mode as one that at least is suitable for industrially advanced economies. He derives this conclusion from a unilinear evolutionist perspective. There are stages of economic development that roughly match training objectives, and the latter evolve from well-defined specialized skills, to pre-vocational training and attitude change, to meeting the requirements of an economy that is increasingly based on information technology. He claims that diversified secondary schools – giving a mix of general education and broad vocational skills – with the later availability of specialized training (in pre-service and in-service training centres,) are the best provision for this third evolutionary stage. But the empirical support for the notion of such evolution is not strong, for industrially advanced countries do in fact show a wide diversity of modes for initial vocational training, though some convergence may occur (*See Chapter 3, Section 3.2 page 67*).

One of the problems with training based in secondary school is that the syllabuses tend to become semi-permanent and hence liable to become obsolete – especially where a course has the dual function of preparing some students for higher education and others for the labour market (Dougherty, 1989:74). Responding to labour market change through curriculum revision is typically a slow and cumbersome process in secondary schools run by a Ministry of Education.

Another problem is lack of attraction to students who have no particular motivation or aptitude for the trade concerned, but who enter the vocational courses simply for want of better alternatives. Interest in the trade subjects will then suffer. If further opportunities in the trade are available after school, the students may not be interested. Secondary school-based training (as well as pre-vocational education) can overcome the status problem when a concentrated effort is made to support its development in a limited number of schools and when the skills taught relate to high-status modern technology – e.g. the earlier technical secondary schools in Kenya (Lauglo, 1989).

The specialized technical or vocational secondary schools are usually intermediate compared to diversified schools and trade schools, as to the depth of skills taught. In these schools, a path to higher education, often confined to technology subjects, is usually accessible to the graduates. At the same time, institutional specialization has the advantage of being able to concentrate training resources in a smaller number of schools. It also provides better visibility to employers. These more specialized secondary schools often have a different history, having evolved through 'academic drift' from trade schools, e.g. technical-bias secondary schools in Tanzania, the technical secondary schools (up to 1986) of Kenya, and the technical high schools of Guyana (Jennings, 1987).

A common criticism of training in secondary school is that it connects poorly with related work. The rate of movement into relevant trades or further training was very low in the pre-1986 Kenyan technical secondary school system (Närman, 1988a; Lauglo, 1989). Noah and Middleton (1988:49) report that despite the close links which Chinese vocational secondary schools have with local industry, their graduates often work outside the specialty for which they have been trained. In China, this problem appears to be greater in vocational secondary schools than in other modes of training. Nonetheless, the impression is that the specialized technical secondary schools, compared to training in comprehensive schools, usually perform better in the labour market – both in terms of access to 'related work' or to jobs more generally. Hultin (1987:53), drawing on experience from World Bank projects in developing countries, claims that employment rates are higher in vocational secondary schools than in diversified (comprehensive) schools.

There is certainly no international iron-law to show that secondary school-based vocational training gives no labour market advantage over purely academic education. An Israeli study by Ziderman (1989) showed vocational schools to be more cost-effective than general academic education. Norwegian research by Lindbekk (1989) similarly shows superior labour-market value of school-based vocational training over purely academic secondary education (he did not address cost). Other main arguments against secondary school-based training are high unit costs, inadequate support systems for materials and maintenance, dissipation of resources when these are spread too thinly, and inadequate managerial attention to the special needs of training when it is but a minor part of a system that is mainly concerned with general education. These problems also exist in other modes of training; but they may be harder to solve in secondary schools (especially comprehensive schools) because resources will then usually be spread more thinly (in more schools) than in more specialized training institutions which clearly are focused on the business of vocational training. Training which occurs in a school that is mainly devoted to general education is also likely to have lower visibility to employers than training in more specialized institutions.

Trade Schools and Training Centres are a variant of the school-based mode which may be described as institutions wholly dedicated to vocational training. This variant does not prepare for further academic education or further higher studies in related technology. The minimum entrance requirement is usually whatever is considered 'basic education'. In most countries this will be primary school, but in those with high secondary school attendance the entrance requirement may include the lower secondary stage. As a sub-type, trade schools are quite heterogeneous in terms of skill levels, extent of integration with a national system and links with employers. The duration of courses varies. The courses are usually pre-employment but trainees are sometimes sponsored by an employer. If a course is sufficiently substantial, it may prepare for an externally validated trades test or proficiency certificate.

Employers sometimes prefer short, more skill-specific training centres to longer and broader courses which extend over several years. There is an international stereotype of hard-nosed employers who, if they recruit from school at all, prefer to take on a more malleable trainee from a short basic course than someone 'who has been too long in school' and acquired unrealistic ambitions or 'grown too soft'. Small-scale entrepreneurs, especially, will harbour a populist scepticism about school as preparation for the 'real life of work'. In the Republic of Korea, employers are said to prefer applicants whose background is a one-year course at a vocational training centre rather than those from three-year technical schools (Charmes & Salome, 1987:29).

The better resourced, modern-sector orientated courses in training centres may include in-plant training. Such mixed systems involve various combinations of institutional and on-the-job training. Mixed systems are complex and difficult to develop – seeking to combine advantages of training in institutions and on the job. When in-plant training becomes more than a short 'attachment' and the trainee is given real work responsibility, it shades into apprenticeship.

'Skills centre' is a term often used about provisions which are more local in orientation than 'schools', in that they were established by local or NGO initiative and are not part of any larger 'system'. They typically teach crafts rather than industry skills, with less sophisticated technology and frequently with the aim of preparing for small-scale entrepreneurship in the informal local economy. Because of these traits, they are often referred to as 'non-formal' though they are formally organized for the specific purpose of training.

Especially in developing countries, a distinctive contribution of such skill centres is that they can mobilize local resources for training and contribute to geographical dispersal of training opportunity. But if the aim is to train mainly for the local non-wage economy in developing countries, it often turns out to be unrealistic. King (1980) notes that locally adapted training will be used as an alternative channel through which to enter the modern wage-economy in the urban sector. Tracer research on the Botswana brigades strongly confirms this impression (Närman, Franzén & Emanuelsson, 1988). King observes that trainees and parents press for modern-sector orientation of course content and for take-over by the national system.

The success of such 'non-formal' courses is uneven. When successful, they are difficult to replicate because by their very nature they are not part of any nationally organized system and depend on the quality of fairly autonomous local leadership. The very autonomy which can give such skills centres valuable 'flexibility' also makes it more difficult to assist them, as a system. The conventional wisdom is that they are more effectively aided through their associated voluntary organizations, when these exist, than through ministerial channels. Hultin's (1987:52) impression is that there are "*more execution problems with non-formal institutions.*"

Thus, school-based training refers to a range of separately institutionalized training as to duration, depth of skills taught, and degree of integration with mainstream secondary schooling. In all countries, there has been recognition of the need to develop separately institutionalized vocational training. But the extent of institutional integration that 'training' should have with 'education' remains a controversial policy issue – especially in many developing countries.

Among industrialized countries, Sweden stands out as a case that has pioneered the development of school-based vocational training as part of a system of comprehensive secondary schooling. It can thus serve as an example of what the achievements and shortcomings have been when that school-based variant, which is now especially controversial in developing countries, has been promoted with strong political support and willingness to make resources available, in a highly industrialized society.

2.1.1 Vocational education in Sweden

Sweden stands out as a country which has long pursued egalitarian policies in education, and which has sought to build a nationally unified system of publicly provided education and training – with operating responsibility devolved onto elected local government. In earlier decades, egalitarian policies focused especially on improving equality of access in different localities and equalizing access to school for youth of different social class origins. More recently, improved access for females and for the disabled has become an important additional equity goal. There has long been a strong adult education tradition, connected with broadly based political and cultural movements, which has generated receptivity to concepts of 'recurrent education'. A strong emphasis on mainstream *schools* as the main training arena is derived from these long-standing policy priorities.

Early in this century, Swedish commission reports on vocational training did show some interest in German and Austrian models, but Sweden never enacted any apprenticeship legislation. Industry may have been wary of apprenticeship because it retained a connotation of technological conservatism and restrictions of hiring practices from the guild system in the early nineteenth century. Both among employers and trade unions, craft identification is relatively weak in Sweden – this may reflect on the nature of Swedish industrial structure, and its influence was slight on policies for vocational training.[6] Thus, the school-based character of Swedish vocational training is not only a result of the long record in Sweden of Social Democratic political domination. Though there is much industry-based training in Sweden too, especially in the large firms, industry has shown little interest in the apprenticeship mode.

Some international surveys (e.g. OECD, 1979) have given the impression that apprenticeship does not exist in Sweden. In fact, apprenticeship has existed all along in certain trades, but then only by direct agreement between employers and the trade unions concerned, without any legislative basis. In practice, Swedish apprentices have received wages at a level suggesting that they too are considered employees of the firm. Large firms used to run their own internal vocational schools to give basic training to their own future employees, but these schools were displaced by the growth of the public system in recent decades.

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[6] In Germany too there was a decline of apprenticeship after the mid-nineteenth century dissolution of the guilds. It was only under the Third Reich in the 1930s that apprenticeship was revived by legislative initiatives and was adapted to skilled industrial work. Possibly, promotion of apprenticeship then gained support from the strong ideas of occupational corporatism in Fascist ideology. Alternatively, this development may simply reflect the general tendency of Nazism to impose central regimentation on many features of social life which previously had been left unregulated by the central government.

In fact, the training concept of the early (1920s) Swedish vocational schools was to prepare for apprenticeship. But because of the inadequate availability of apprenticeship, the vocational schools extended their aim to that of giving entry level skills (Nilsson, 1981:99). During the economic depression of the 1930s, vocational schools were seen as part of an active social policy targeted on unemployed youth. The type of vocational school which was then developed by country authorities became the main model for the many municipal vocational schools which were established in the late 1940s and early 1950s. This model, aiming at 'complete' basic training, entailed relatively high demands as to facilities and level of equipment.

The education system has been radically reshaped since the 1940s. First, during the 1950s, a comprehensive lower secondary school up to age 16 was created, replacing earlier separate provisions of 'academic' and non-academic provisions at that level. Raising the range of compulsory schooling from age 14 to 16 meant later entry to vocational schools and to the labour market.

From 1968, academic secondary schools and vocational schools were merged into an integrated upper secondary school *(gymnasieskola)*. In the new system, alongside general education lines, vocational education has been provided in 13 broad lines of two-years' duration, a three-year economics line, and a four-year technician line. These broad lines allow further specialization by means of alternative training 'blocks'; but the guiding principle behind the new structure was to avoid early, irrevocable, narrow specialization. It was hoped that vocational education would gain status by becoming part of a comprehensive system, and by giving more emphasis to vocational theory and general education subjects. It was argued that this structure not only served egalitarian ends but was also the best preparation for a changing technology and economic structure.

The public responsibility for training is stressed. Local government owns and operates the schools, but policies have stressed a unified national system – until recently with detailed specification of curricula, and with clear lines of administrative responsibility unified at both local and central levels. Under the Ministry of Education, there was until 1964 a separate National Board of Vocational Education with strong industry and labour representation. But this Board was abolished to prepare the way from 1968 for institutional merging of general and vocational education. Thereby the 'education interest' gained influence at the expense of the 'training interest', reinforcing the concept of a broad and rather general vocational *education*, with preparation for egalitarian citizenship as an important declared aim. In connection with the recent (1991) reform, the 'training interest' has been given restored influence through local and national *yrkesråd* (trade committees) which advise on training contents, and more authority has been given to local government as to curriculum details. Thus, the degree of central control and 'educationist' influence over vocational training have recently been reduced.

The totality of new vocational courses after 1968 came to be more geared to service occupations of the welfare state, and less to traditionally male-dominated industry and craft courses than the old vocational schools. For the sake of equality with general education lines, the number of workshop periods was substantially reduced. To compensate for this loss it was hoped to make better use of training time by introducing a 'station system' in the workshops with extensive dependence on self-instructional learning materials. Students were to rotate among these 'stations' and learn more at their own pace, and the programmed rotas would make fuller use of expensive equipment. These changes have been studied by Nilsson (1986) who questions their practicality and efficiency – especially for the less able or less motivated students. The pedagogic adequacy of self-instructional materials connected with the training-stations is more limited than hoped for by its advocates. The station system posed problems of fragmented learning and remoteness from 'real' technical tasks. In recent years, the 'station' pedagogy has been de-emphasized. The adequacy of the 1968 system, with its reduced workshop hours, as 'complete basic training' has gradually became more evident, and the need for supplementary training in industry has become increasingly recognized. Some schools did make arrangements for some 'work experience' in industry, but usually without much planned training content. Especially in the mechanical trades, it is widely felt that the old system of separate vocational schools gave training of better quality.

Research has shown weak connections between most vocational lines and the work which students later find. Nilsson (1986) summarized the main findings from studies in the late 1970s: only one-third of the students entering the vocational lines were three to four years later in an occupation which their training had sought to prepare them for; and about one-third were in an occupation for which their training seemed not even broadly relevant. Further, in only their first year of school 20-30 per cent dropped out; and most of these were unemployed three to four years later.

More recent surveys show much variation among different vocational lines (Skolöverstyrelsen, 1986:51-52). The match between training and later work seemed weakest in the 'workshop mechanics' trade. Only 40 per cent of those who completed schooling in this trade in 1983 were two years later in an occupation for which their schooling was deemed broadly relevant; the match was better (59 per cent) for those who had received training in commerce and office skills, and quite good (87 per cent) for the *vård* ('social care' occupations). Further, recruitment for occupations was from a wider range of backgrounds than the lines intended to prepare for them. More than half of those who had been recruited as mechanics in engineering workshops had not been trained in the 'workshop mechanics' line – many of these had received a technician's training (four-year engineering line) or been trained as auto-mechanics. It appears as if the match between school-based training and subsequent work in the early 1980s was best in the new 'white collar' lines, oriented towards commerce and towards office work in the public services of the welfare state, and poorest in those lines which sought to prepare for skilled manual work in the export industries.

The 1970s and 1980s saw massive expansion of the vocational lines. At the end of compulsory schooling (age 16), about 85 per cent continue to the integrated upper secondary school. In 1984/85 fully three-quarters of these entered vocational lines. Some vocational lines have more competitive entry than the general education lines. Though individual schools can offer only a restricted mix of general and vocational lines from the full national range of lines, the goal of wide geographic dispersion of provisions drives up the unit cost of this form of school-based vocational training. In general, Swedish schooling probably has the highest costs in the world (Marklund, 1984: 166-169), in terms of percentage of GNP, probably also in terms of unit cost. The unit costs are especially high in the vocational secondary lines (Skolöverstyrelsen, 1986:59).

Over the years there has been much growth in local variants (specialist 'blocks') within the vocational lines so that the system as a whole became much more internally differentiated than had been anticipated when the case was made for unified and broad basic training. Great growth and variety in local 'labour market training' for the unemployed and in other adult education courses of a vocational kind have added to the complexity and strengthen the case for renewed simplification of structure.

Since the early 1980s, faith in efficiency of the public services of the welfare state has been weakened. There is now stronger awareness of a trade-off relation between equality and efficiency, and a greater concern than previously with efficiency. The swelling costs of public services and reduced economic growth have led to policies seeking to curtail the growth of public expenditures and to make public services more cost-effective. The Social Democrats have lost ground politically; and their ideas have in recent years come to resemble more those of private business: decentralization, management by objectives, stronger accountability for reaching objectives, greater faith in the importance of incentives and in the market mechanism.

The early advocates of training in integrated secondary school had faith in the capacity of schools to promote the attitudes which also industry had stressed so strongly: *"being able to work together, resolve conflicts, behave responsibly"* (Boucher, 1983). This confidence in schools as an adequate arena for socialization to work has declined, along with a general loss of faith in the welfare state. Boucher noted in 1983: *"Both pupils and employers continue to see the school as too remote from the 'real world', and all pupils, irrespective of line of study, wanted work experience."*

Following a commission report in 1986 on vocational training (SOU 1986), a large pilot programme was launched in 1988, extending the two-year vocational lines to three years, both to improve depth of training and to give a broader foundation. The pilot programme tried out modularization of the curriculum, and the system of lines and variants was simplified. Syllabuses were to be revised, and equipment was to be upgraded. More scope was given to general education subjects (Swedish, mathematics, English, social studies) along with greater opportunity for individual options. In these respects, the general and school-based character of Swedish vocational education is carried further. But there is also a radical departure: As an integral part of the three-year vocational courses, supplementary training in workplaces is to be developed as 'far as possible'.

Students were neither defined as employees nor as apprentices during their placement – they would receive no pay; the objective of placement was training, not just 'work experience'. Accordingly training objectives were set out in training modules for which the firm would accept responsibility. The aim was to gradually increase the share of training time in the workplace modules, from 10-20 per cent in the first year of school to 60 per cent in the third and final year. In keeping with the new involvement of industry, employers and unions were given renewed direct influence over the content of vocational training at national and local level through a structure of advisory boards for different specialities. The key question to be resolved during the pilot programme was to ascertain how far it was possible to extend such placement by voluntary co-operation from employers, in terms of scale and defined training contents.

There has been much consensus among the concerned interest organizations about the need for a reform of vocational training, and hence strong pressure for rapid expansion of the pilot programme. The climate of opinion – also within the trade unions which previously favoured school-based public training more exclusively – now values the workplace itself as a supplementary arena for basic training. But *LO*, the Swedish Federation of Trades Unions, continues to stress egalitarian goals and sees strengthening of general education subjects as desirable in order to build better links between vocational and higher education, to provide a better foundation for civic participation, and to make youth more 'trainable' so as better to avoid unemployment. From the point of view of *LO*, a weakness in the system that developed after 1968 is that it did not go far enough in breaking down the distinctions between general education and vocational education. *LO* has therefore been especially concerned to ensure that the pilot programme would not perpetuate social class and gender distinctions.

The employers' organization (*SAF*) has stressed the need for greater efficiency: curricula should be based on modules which must clearly define the skills to be learned, assessment learning must be based on their demonstrated mastery of these skills, institutional management should be stronger and more 'business-like' and it should be more accountable to representatives of industry, both locally and nationally. *SAF* has not advocated an apprenticeship system, but it has stressed the importance of socialization to work and even proposed a new subject, *'yrkesmannaskap'* (workmanship), that should promote work morale, teamwork, responsibility, quality consciousness and appreciation of the need for efficient, profitable production. Compared to *LO*, *SAF* has more strongly argued that curricula should have a clear vocational orientation in the new system. *SAF* has seen strong industrial (employers and unions) local influence on the content of training as a means to safeguard their interest. For SAF, an important goal is to restore a close connection between institutionalized training and industry. There is some nostalgia for the company-run vocational schools which previously existed, alongside public vocational schools, but which were squeezed out by the expansion of comprehensive upper secondary schools in the 1970s and 1980s.

The pilot programme struck a balance between the concerns of both unions and employers. By extending the duration of training to three years, one sought to accommodate the wishes for breadth and stronger general education elements whilst also making room for a more complete and 'workplace' related basic training.

However, after two years of follow-up, the evaluation of the pilot programme (UGY-kommitten, 1990) noted that it was very difficult to find a sufficient number of training places in companies. It was especially hard to persuade small companies to take on students, to find supervisors for these students and to release staff for training in supervision of students. Further, companies often lacked advanced equipment or other capacity fully to implement the training modules requested of them. Within the schools, there was considerable dissatisfaction with the new modular curriculum structure; many teachers and students thought it entailed excessive fragmentation of learning.[7]

Prior to the 1991 parliamentary election which led to a new coalition government headed by the Moderate (conservative) Party, the Parliament enacted a new framework for upper secondary (16-19) education. All lines will be of three years' duration. The structure of curriculum variants within the lines is to be simplified. But since there will also be more scope for local determination of contents and for individual options by students, it remains to be seen if reduced diversification will be the result for the national system as a whole. General education subjects are strengthened in the vocational lines. National curricula will be stated in terms of broad objectives, leaving specification of contents to the local authorities. The provisions for adults and the unemployed will be co-ordinated more deliberately with those for regular students. The pilot programme's concept of national training modules is abandoned. Within national objectives, local authorities are given the right to determine the contents of training, both at their schools and for training undertaken by work organizations. The minimum target for training carried out at workplaces will be only 15 per cent of total instructional time in the vocational lines, substantially less than the target during the pilot programme; but the aim is to raise this proportion whenever it is locally possible to do so. The old system of vocational training in Sweden was financed by local government whose income was a combination of local taxes (mainly income tax) and a block grant from the state. It has been difficult to reach agreement on who is to fund the additional financial resources which are required to implement the new system. A previously existing payroll levy on employers will be tapped into in order to cover extra expenses incurred by employers for training at workplaces.

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[7] This bears some similarity to Nilsson's (1986) earlier criticism of the 'station system' but the fragmentation of training which he criticized concerned smaller units of contents than the new 'modules' which were tried out in Sweden.

The main theme of Swedish training policy has thus been the growth of school-based provisions on a large scale, administrative and institutional unification of general and vocational education, faith in what schools can achieve by way of socialization to work and citizenship. But the system is expensive; and the match between training specialities and later work is poor. In spite of renewed interest in training based at the workplace, efforts to promote this as a direct extension of school-based vocational education have so far met with great difficulties. Therefore, the main likely result of the recent reform may well be to develop the *school* further by adding time, broadening specialities, allowing for more individual choice of curriculum components, and adding more general education.

If that turns out to be the case, Swedish history will have repeated itself. The early vocational schools of the 1920s sought to prepare for apprenticeship, but extended their goal to that of a more or less complete basic vocational training because of lack of apprenticeship opportunity. As the system has developed, there has all along been awareness of the need for further training in industry. And now there is a wide consensus on the need to involve work organizations more in basic vocational training. But industry, struggling under economic recession, is unable to shoulder as much responsibility for basic training as policy makers would wish, and the main effect of the new policy could be to extend the time in school.

All along, policy has assumed that the demand by youth for training must be balanced against industry's demand for skilled labour. The main device for coping with a short term mismatch between these demands has been a broad vocational education whose boundaries with general education have become increasingly blurred. But there are now nagging doubts that this schooling may be 'too slack' and too remote from real production to give adequate socialization for the demands of the workplace. It remains to be seen how far the moderate Minister of Education, in the conservative-centrist coalition government which gained power in 1991, will actively promote apprenticeship, alongside the changes planned for the schools. But as of early 1993, the severe crisis in the Swedish economy may well slow down implementation of the plans adopted earlier for the development of vocational training both in schools and in industry. The problems of inducing industry to take on a shared role with schools, in providing training places, have doubtless now been aggravated. To promote any additional apprenticeship policies under the present dire economic circumstances may well be far down on the present (early 1993) government's agenda.

The generally 'loose' match between school-based training and later 'relevant' work, which was noted in Sweden in the early 1980s, and the differences in this regard among various trades, suggest questions for further research on the articulation between school-based training and subsequent career. In the 1970s and 1980s, employment was growing in those sectors in which the match between training and work seems to have been closest (white collar occupations). With more recent attempts to hold back further growth in the public sector, it could be that the correspondence between training and later work has also become looser in the public services. In general, one would expect school-based training to articulate better with expanding than with contracting occupations.

Labour market conditions apart, it could be that schools in diverse ways are culturally closer to the work reality of white collar occupations than to the manual ones. School education is above all concerned with manipulation of symbols. As such, the 'logic' of schooling may be more compatible with the demands of white collar jobs than with manual work. Employers may in any event be influenced by the notion of a greater gap between schooling and work, in skilled manual work than in 'desk jobs'. Research into such matters is regrettably sparse. But labour market segmentation theory invites inquiry into such questions about different connections between schooling and work in various types of jobs.

2.2 Apprenticeship training

In an apprenticeship agreement, an employer undertakes to train and usually to pay an allowance, in return for the apprentice's untrained labour. The relationship of apprentice and master/employer has varied greatly. In ancient Japan an apprentice would typically be adopted into the master's family. In the traditional European guild system apprentices were often provided with board and lodgings within their master's household. In some cultures, a craft has historically been the property of a caste (as e.g., in the tradition of the Indian subcontinent), so that trade secrets are guarded jealously for one's own group. A belief which can be associated with a caste's tradition is that 'the trade skills are in our blood' and that outsiders are really incapable of fully learning them. Apprenticeship will then stay within family and caste.

It is not unusual under traditional apprenticeship that it is the apprentice who must pay in order to gain access to the master's craft. But under modern apprenticeship agreements, the apprentice is paid a wage or a more modest subsistence allowance. Traditional apprenticeship exists side by side with modern apprenticeship in many developing countries. Modern apprenticeship is regulated by law as to scope, duration, and remuneration. It is this modern variant which will now be discussed, since it is on modern apprenticeship that training policy has a bearing. If policies address 'traditional' apprenticeship, the latter is modernized by the very process of public regulation.

The interest that especially a firm has in taking on apprentices will depend, *inter alia*, on the magnitude of the apprentice's pay. The smaller the remuneration, and the more easily training can occur informally as part of the natural flow of productive work, the greater will be the firm's own interest in taking on apprentices.[8] In countries which have an extensively developed apprenticeship system (Germany, Switzerland, Austria) the wages paid to apprentices are distinctly low – below the rate for unskilled work, really only an 'allowance' rather than considered a 'real wage'. Conversely, in countries where apprenticeship is marginal to the education and training system the remuneration can be relatively high – towards the end of the apprenticeship period about three-quarters of that of a skilled worker (Norway, Sweden). Thus, it is likely that relatively high apprenticeship wages will tend to suppress the demand for apprentices, though the elasticity of this demand is unknown. In any case, within a company, 'high' apprenticeship wages that approximate those paid to regular workers, will tend to blur the distinctions between an apprentice and a regular employee. An apprentice will then tend to be considered an 'employee' even if only on probation.

Modern apprenticeship is usually supplemented by courses in trade theory and general subjects in a school or school-like setting. This may be organized in diverse ways – as evening classes or as full-time schooling during certain periods (day-release or block-release). Large companies run their own internal schools for apprentices, training centres may be run by associations of firms, or trade theory and general subjects may be taught within public vocational schools. A common problem in dual systems (apprenticeship with a school-based supplement) is weak co-ordination between the two training arenas as to content and the sequence of what is taught.

Modern apprenticeship prepares for a trades test. Those who pass this test are awarded a certificate of completed apprenticeship or journeyman's certificate. As a formal qualification that may confer certain rights, such tests must have relatively stable requirements and yet be adapted to varied training conditions in the firms that take on apprentices in a trade. The training regulations and testing content may therefore tend to conserve trade skills which are out of date in the most technically advanced companies. But school-based training tends to suffer from similar problems.

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[8] But it could be simplistic to expect high elasticity between apprenticeship pay (or subsidies from government), and a company's demand for apprentices. Changing incentives need to impinge upon those who take decisions to take on new apprentices. If, within large firms, these decisions are taken by lower level managers and supervisors at shopfloor level, then they will be influenced by their need to meet productivity targets. Unless changes in apprenticeship pay scales and (in some countries) government subsidies affect these productivity measures, changing pay and subsidies may have little effect on the aggregate demand for apprentices. This is emerging as a conclusion by Svein Michelsen, the University of Bergen, in a qualitative study of apprenticeship in some Norwegian industrial firms.

Compared to school-based training, apprenticeship is more specialized. It is therefore often accused of excessive narrowness. But 'narrowness' in the eyes of critics becomes valued 'depth' to its advocates. It could be that such 'depth' has transfer value outside the intended specialties, not only among kindred occupations with overlapping skill. Much of such claimed transferability has to do with values, attitudes, and work habits. Thus, de Moura Castro (1988) argues that socialization to the culture of workmanship and to the occupational community of the trade matters greatly for quality in vocational training. He says that such socialization requires separation from general education rather than integration with it. Apprenticeship fits this requirement, and trade schools would come closer to it than do secondary schools. In this perspective, values and attitudes are of key importance for effective training – the value of completing a job properly, self-discipline, admiration for painstaking perfection and contempt for sloppy work. Keeping a workshop tidy and clean is then more than a practical necessity to get work done. It is, like other rituals, acting out for public display central norms. In, for example, the occupational community of machinists: "*The liturgy of cleaning is a means to transmit the values of the occupation*". An important part of De Moura Castro's argument (1988) is that these important values are only taught through skill acquisition in close association with the 'real world' of the occupation. A recent OECD report (OECD, 1989, Chapter 4) also recognizes the importance of institutional separateness in order to preserve a plurality of values lest vocational training be overwhelmed by the values and norms of that part of education which lies along the path to university.

The historical origins of apprenticeship lie in the craft and artisan trades. In some countries it has remained confined to such trades – it is precisely in some of these trades (e.g. goldsmith, fine cabinet making) that it survives in countries which have evolved a predominantly school-based mode of training. In some other countries apprenticeship has expanded beyond its traditional base to also include skilled work in industry and in the service occupations (Germany, Switzerland). But it is probably in the traditional crafts and in craft-like modern occupations (e.g. electrical installation) that apprentices most naturally fit into the flow of work as 'a helping hand with a chance to learn'. Compared to skilled work in industry, a master in the crafts and artisan trades will perform more varied tasks and make more complete products.

An argument in favour of apprenticeship is that it is inexpensive. It is clearly cost-saving to government, because employers, even if induced by tax credits or other subsidies, are the main training providers and bear most of the direct cost. Total costs to the national economy may also be reduced because the same resources (instructors, equipment, materials, and time) are combined for training and production. Economists have for some time been pointing out this cost advantage (Zymelman, 1976; Metcalf, 1985); and recent empirical studies have confirmed this conclusion. Ziderman's (1988) research in Israel, in accordance with earlier findings in that country, shows apprenticeship to be much cheaper than vocational school but equally effective in terms of the trainee's later income.

Corvalan (1981) compared cost-benefits of technical school training with apprenticeship in Chile, and found the latter to be more efficient. But later, Corvalan (1987) noted a common constraint: an expansion of the apprenticeship programme was impossible in Chile due to "*lack of interest among the employers*". Apprenticeship is not employment, but it is informally a probational job placement which enables an employer to keep a pool of future applicants at hand and to look potential employees over. Employers therefore lose interest in apprentices when they must shed staff. So the scale of apprenticeship training suffers during recessions.

Another limitation is lack of open competition for the places available – a feature that also characterizes modern apprenticeship, not only the traditional type. Especially small-scale employers tend to give priority to apprentices who are recommended to them through personal networks, and are loath to sign contracts with persons unknown to them. Mabawonku (1979) writes about Nigeria that recruitment of apprentices in small-scale industries is often undertaken through informal discussions between the proprietor and his neighbours, customers or relatives. There are similar constraints in industrially advanced countries. Apprenticeship can become a 'closed shop' for those with inside connections in the trades concerned. This may be especially true of the rather small enclaves of craft apprenticeship which exist in some 'Anglo-Saxon' countries. Control over recruitment to apprenticeship and deliberately elaborate skills requirements for trades tests have been part of a 'closed shop' strategy of unions, which have sought to restrict the supply of labour in their trade and to give privileged access to their own kith and kin. But also when access is not deliberately biased towards those with inside connections, groups which have not in the past had access to the trade may face barriers (e.g., women, 'outsider' ethnic groups). In any event, the importance of informal connections will tend to place at a disadvantage those whose origins are geographically remote from the trade activity concerned.

A French report (*Assemblée Permanente des Chambres de Métiers*, 1981), which is summarized by Corvalan (1984) notes that few employers take on apprentices, despite pressures from various groups; and further that the sons of artisans tend to have privileged access to the scarce places. Interestingly, the French study shows that common complaints which master craftsmen have about their apprentices, is that the latter are *not* hardworking, motivated or obedient. Clearly, one must beware of romanticizing the effectiveness of socialization to 'higher values' in 'real work' situations – or for that matter, the extent to which apprentices are systematically taught skills, rather than being exploited as cheap labour.

A range of other complaints are common. Noah and Middleton (1988) mention: too early and often too narrow specialization, exploitation of cheap labour, that it is social-class based and class perpetuating, impoverished curricula in terms of theory underlying practice, and an insufficient number of training places during periods of economic downturn. A UNESCO (1983) report states: *"Apprenticeship programmes, often cited as a strength area, still suffer in many countries from lack of appropriate workplaces and qualified supervision"*. One might think that industrially advanced countries have overcome such problems. But these countries also have problems of uncompleted apprenticeships – though reporting seems to be lacking on the exact completion rates. An OECD report (1979:38-48) gives some indications from the mid-1970s: in the United States it was then estimated that half the entrants failed to complete their apprenticeship. Both in the US and Canada irregularity of employment in the construction industry drives down the overall completion rate – there are frequent lay-off periods when work is slack in these industries. In Britain a high 'wastage rate' was also reported for engineering apprenticeships in the 1970s. But there are differences among countries; in Switzerland the completion rate is quite high.

The match between apprenticeship trade and later work is sometimes loose, as will be shown in the case of Germany. Such looseness may be a function of labour market conditions. But the scale of apprenticeship in a society may also matter – for example, that the match will be tighter when apprenticeship is a rather small and special enclave rather than a mainstream route in an education and training system. Research into this possibility is lacking.

Apprenticeship is sometimes held up as a training model for developing countries (e.g., Brooke, Oxenham and Little, 1978 on Mexico) because the performance of school-based training has been disappointing. But the organizational complexity of apprenticeship is easily overlooked. Apprenticeship may sometimes be referred to as 'non-formal' because training occurs without much distinction from the context of work (e.g. Zidermann, 1988), but it requires in fact a great deal of formalization in the sense of *deliberate organization*. Companies, which are physically dispersed and not subjected to government direction, need to be induced voluntarily to take on apprentices and to provide training of some defined content. Special efforts and some degree of separate organization are usually required to provide systematic apprenticeship training within a firm. Supplementary courses need to be mounted (evening classes, day release, or 'sandwich') in order to cater for dispersed apprentices coming in with varied work-based experience; systems are needed to monitor training in companies, follow up apprentices, and to organize a system of trades tests. Considering all these complexities, it would appear that to build a national system of apprenticeship training is a greater organizational achievement than to develop school-based training.

2.2.1 Apprenticeship in Germany

The German 'Dual System' of apprenticeship supplemented by part-time vocational school, as it has developed in the post-war period, is internationally acclaimed as an advanced version of apprenticeship training.[9] In the 1960s there were more than 600 apprenticeable trades. Training under this system remains highly specialized though by the late

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[9] This section is based on sources pertaining to the Federal Republic prior to German reunification. But one would expect that the system in the eastern *Länder* will come to resemble that which is established in the West, even more so than at present.

1980s the number of trades had been consolidated to 420. But more than half the apprentices are in 25 trades. As of 1988, the largest apprenticeship trades catering mainly to males were: auto-mechanic, electrician, joiner, painter and decorator, wholesale and export clerk, machine fitter, bank clerk, gas and water fitter, industrial clerk, fitter; and those recruiting mainly females: hairdresser, office clerk, service assistant in the food trade, medical assistant, industrial clerk, retail sales clerk, sales assistant, dental assistant, bank clerk, and wholesale and export clerk (Greinert, 1992:92). The prescribed length of training depends on prior education and varies among the trades. It is usually three years.

Apprenticeship in a firm is combined with part-time attendance at the *Berufsschule* (vocational school).[10] Together the two components are known as the Dual System. In this system the dominant training arena is clearly the firm, not the school. Apprentices spend some 30 hours a week in the firm. In the old pattern, which still exists in some trades/localities, the marks they received from *Berufsschule* (vocational theory, general subjects) did not even count in the final assessment at the trades test. However, present practice varies, since there is now in some localities a new system whereby the theory mark does count along with a practical test (and an oral exam) which is administered by the local Chamber. During apprenticeship, divided responsibility creates some problems of coordination in what is taught in the firm and in industry association training centres, on the one hand, and, on the other, what the part-time school teaches.[11]

Whilst *Berufsschulen* are run by each *Land* (the states within the Federal Republic), apprenticeship training is conducted by companies under supervision and guidance from Chambers of Industry, Craft, Commerce and Agriculture. These Chambers also administer the trades tests. The role played by the different labour market organizations in the training system is described by Streeck *et al.* (1987). Government officials and trade unionists take part in national and local boards which regulate and guide apprenticeship, but the dominant influence clearly lies with the Chambers and with the individual firms. A federal body, the BIBB *(Bundesinstitut für Berufausbildung)* with strong representation from the Chambers, has national responsibility for revision of the training contents that is prescribed in the apprenticeship regulations and conducts research and development work.

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[10] Part-time attendance at a Berufsschule is compulsory for all youth aged 15+ to 18 who are not in full-time schooling, regardless of whether they are apprenticed. Since the Berufsschule is primarily designed to be complementary to apprenticeship, this requirement probably reflects the view that it is 'normal' for youth to be apprenticed after completing compulsory full-time education.

[11] But industry association training centres are heavily subsidized by government funds. The staff there are paid according to public service regulations but employed by the Chamber concerned.

More than two-thirds of the 16-19 year-olds receive their vocational training within the dual system (Greinert, 1992:17); and this proportion rose from about 47 per cent of the age group in 1976 to some 70 per cent at the end of the 1980s. There are also numerous fully school-based training provisions, most of which serve as gap-fillers for youth who fail to secure a place in the apprenticeship system, or they prepare for occupations which are not well covered by apprenticeship. The main gap-filler has been the one-year basic training course (BGJ) which was introduced in the early 1970s. It gives a deliberately broad foundation of skills and was intended to confer credit towards the first apprenticeship year. In 1982 these courses enrolled about 20 per cent of school leavers (at age 15-16). Since then the enrolment has declined in the main, fully school-based variety of the BGJ. Though better established and more common in some *Länder* and regions, the BGJ suffers from a lowly reputation and serves mainly as a waiting room. Tellingly, apprenticeship applicants often *conceal* a BGJ background (Schoenfeldt, 1986). But there is also a 'co-operative' variety of the BGJ, which is part of the dual system in that students are enrolled *after* they have obtained an apprenticeship contract, and they attend the school on a part-time basis alongside apprenticeship training. Enrolments in this variety were increasing in the late 1980s (Greinert, 1992:72), and it functions as an alternative to part-time *Berufsschule* attendance during the initial period of apprenticeship.

The form that school-based provisions take, and their links with the dual system, vary among the *Länder*. The BGJ is more common in *Länder* with less industry. In the highly industrialized *Länder* of Baden Wurtemberg and Bavaria, a better established school-based foundation for apprenticeship is the *Einjährige Berufsfachschule* – a one-year course which is offered both to those with apprenticeship and those without. These courses, mainly in the crafts trades, are more specialized and reportedly have a good reputation. The success of schools in placing those without a contract in apprenticeship after basic training depends on relations the school has managed to establish with the Director Generals of the local Chambers of crafts, industry and commerce – the bodies which supervise and apprenticeship schemes. Hence it is important to offer courses which are taken seriously as 'real training' by industry. Thus, the German experience is that the broad school-based BGJ, if offered as a full-time course for youth without an apprenticeship contract, has not worked well; and further, that school-based provisions work best when they are more specialized and when the school has succeeded in establishing close relations with the local Chambers. In the end, school-based provisions work best when they become an integral part of the dual system so that the students arrive with an apprenticeship contract already signed.

What most clearly gives an advantage in selection to apprenticeship is a good general education. Apprenticeship does not cater well for the early school-leaver. Those who at the age of 15-16 came directly from the 'non-academic' *Hauptschule* became in the 1980s increasingly relegated to trades of low status, with an uncertain future – or they went to the BGJ. In 1986, fully 60 per cent of the apprenticeship applicants had the *Mittlere Reife* (lower secondary certificate) (Raggatt, 1988). Accordingly, the median age of apprentices was rising in the 1980s. As of 1988, it was 18.7 years of age in 1987 (Greinert, 1992:37). Since 1986, when smaller age cohorts began to reach the apprenticeship age, the competition for places has been easing. Less qualified and younger applicants might stand to gain from this trend, but firms continue to prefer applicants with a *Mittlere Reife* background, since the early school leavers have increasingly become seen as a negatively select group.

Not only the *Berufsschule*, but also the ideals which serve as a rationale of the dual system owe much to Rudolf Kerschensteiner, who stressed the central importance that work has for character development and for a meaningful social life.[12] In this view, work was supposed to be a *Beruf* – indeed a 'vocation' in the sense of a calling in life. The claim by Schoenfeldt (1986) is typical of views associated with these traditional German ideals: *"...by learning an occupation the individual becomes*

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[12] The emphasis on work as a virtue is certainly an older German value; Kerschensteiner's contribution was perhaps primarily to elaborate these ideas in pedagogic thought and to develop influential institutional models.

socially integrated and is in a position to develop a stable self-confidence ... we think that an occupation is more than a technical qualification". In this perspective, the learning in depth of a trade becomes a means of wholesome socialization to work in general. Thus, specialization becomes a vehicle for general education – of value even if the apprentice later should enter an occupation for which the original specialty seemingly is irrelevant. However, as Raggatt (1988) notes, the values which are typically invoked in defence of apprenticeship are conservative ones, conducive to accepting one's place in the social order: responsibility, reliability, accuracy, integrity, obedience, loyalty and thrift.[13] These may well accord with workers' pride in craft and *occupational* identity – indeed with work being a *vocation*. But they also mirror employers' views of good employees. They are not the values of a wider class consciousness, and certainly not of the values of class struggle.

It is therefore not surprising that apprenticeship was under heavy attack during the period of youth radicalism in the late 1960s. Remedial measures have followed. In 1969, the minimum requirements for companies' training provisions were tightened. Training was updated and trades were broadened. Agreements between employers and unions (1978) in the metal industry have pioneered new approaches to training which have also come to serve as models for other trades, stressing updated and broader content, specialities branching out into related trades from a shared core of 'key skills' (*Schlüsselqualifikationen*) in order to improve the relevance of training for a broad cluster of trades. The new fashionable words have been 'flexibility', 'adaptation to change', 'ability to co-operate', and the hard-to-translate *Handlungskompetenz* (ability to act competently, to take initiative, to do a good job).

Since the 1970s, the two components of the Dual System have grown somewhat more similar. Apprenticeship has become more school-like. To supplement training at the workplace, an increasing number of individual firms and industry associations have established their own training centres, teaching not only practical skills but also vocational theory. The training centres run by industry associations are heavily subsidized by public funds. Whilst intended to supplement initial in-plant training, they have – according to their critics – tended to divert more resources than originally envisaged in the rationale for public support, to advanced training of already skilled workers. The centres have emerged as less regulated and as 'private' but mainly publicly funded competitors to the *Berufsschulen* (Greinert, 1992:58-62). Conversely, the *Berufsschulen* have increasingly moved into practical skills training, in the guise of *Labour* (laboratory) periods since skills training is supposed to be the prerogative of the firms.

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[13] Greinert (1992:19) notes that the restoration of training in the manual trades took place during 1870-1920 as part of the policy of the German Empire to protect craftsmen and small merchants, small farmers from proletarization and to transform this class into a 'bastion against social democracy'.

The status of skilled trades is enhanced when they provide ladders of advancement in terms of training and qualifications. Such ladders are highly developed in Germany (Raggatt, 1988). Training draws on this hierarchy of qualified workers for supervision and instruction. In a company, the formal overall responsibility for training apprentices rests with a certificated *Meister* – a highly valued and well remunerated qualification requiring advanced trade proficiency as well as administrative and pedagogic competence. In larger companies, direct supervision is delegated to senior skilled workers who typically train two-three apprentices. Since 1969, there have been various measures to strengthen the pedagogic competence of these worker-instructors. In very large firms, a category of *Ausbilder* ('educators') has emerged with training as a full-time task.

Bundesinstitut für Berufsausbildung conducted a study in 36 companies during 1980-83 on the efficiency of apprenticeship training (Schmidt, 1988). It shows that most apprentices prefer their work and training at the workplace in the firm to the *Berufsschule* or training workshop – in spite of the fact that most of them thought they 'learned more' when taught as a class in the latter settings. The investigation also concluded that varied work tasks which give scope for responsibility and independent action are experienced as positive for learning trade skills. Interestingly, systematic differences were found between different trades in how easily training tasks could be integrated with the natural flow of work. Trades pertaining to office work rated highest in this regard, followed by craft trades. It was in the technical trades in industry that such integration was weakest, indicating that it is harder to graft training onto the natural flow of production in these trades. These findings help to explain why industrial firms are loath to take on more apprentices than they expect to offer jobs to in skilled industrial work.

Since employers control admission, a major problem in access to apprenticeship is inequality of opportunity and insufficient scale of provision. The gap between supply and demand of places widens during economic recessions. In 1983 there were on the average two applicants for each place (Lenhart, 1988). Government has used incentives, pressure and persuasion to raise the supply of places. A major form of pressure has been proposals to introduce a training levy on industry in order to generate funds which could be used as incentives for those who take on apprentices. This proposal has not been enacted but may have functioned as a 'hanging sword' which has spurred the industry associations to induce their members to take on more apprentices than they would otherwise have done. But the number of unsuccessful applicants rose in the 1980s. In 1985, when there were 727,000 vacancies, researchers connected with the trade union interest estimated a surplus demand of about 290,000 (Schönbach *et al.*, 1989). In the late 1980s and early 1990s, however, diminishing age groups of youth have eased the shortfall, in spite of a decline in the total number of places offered during 1985-1988. As of 1991, according to estimates there were 118 places available for every 100 applicants (Greinert, 1992:38). In each *Land*, the Director General of the local trade associations (Chambers) plays a key role in the negotiations to boost the number of apprenticeship places.

There is great regional variation in the supply of apprenticeship places. For example, in 1987 nearly 40 per cent of all places were in Bavaria – but this concentration of opportunity would not have been easily accessible to a youth in Hamburg (Raggatt, 1988). Within each region, those from rural districts would be at a disadvantage compared to youth living where commercial and industrial activity is concentrated. Women are somewhat underrepresented in the dual system and make up some 42 per cent its 'training potential' (Greinert, 1992:37). They are likely to make up a higher percentage of all applicants for apprenticeship, but the main barrier they face is likely to be in getting access to the distinctly male trades. Groups that face greater barriers than others are: ethnic minorities, the disabled and youth with weak general education credentials. Public authorities have provided various incentives in order to induce industry to take on more apprentices from such groups as well as more women. It is estimated that these measures have given access to some 10 per cent of the vacancies (Raggat, 1988).

Compared to school-based training, a major advantage claimed for apprenticeship is lower unit cost. Estimates of unit cost vary. According to von Gilardi and Schulz (1988) the annual unit cost to a company was on the average DM 20,500 in 1985 for all apprenticeable trades. Companies recouped about 40 per cent of this from the contribution that an apprentice makes to production, so that the average net cost to the firm would be about DM 16,000. BIBB estimated for 1980 that the gross cost to a company was about DM 17,000 and that the net cost then was about DM 10,000. The wage received by an apprentice varies considerably among different trades, increasing towards the end of the apprenticeship period. The wage is low: 20-40 per cent of the starting wage of a skilled worker (Raggatt, 1988; von Gilardi and Schulz, 1988), and lower than that for unskilled work. On average, the wage cost to companies is clearly outweighed by other training costs incurred. The gross cost on wages amounted in 1980 to only 35 per cent of the estimated total training cost incurred by the companies. Due to more demanding training regulations this share had been declining during the 1970s.

There is reason to believe that the unit cost is considerably higher in large companies than in small craft firms, because of the greater separation of training from contributions to production in the former. In large companies, it is common for apprentices to spend much of their early training period in training workshops (which are expensive for the firm) before they are let loose on production. The trades which offer the best prospects to apprentices are likely to be those which have the highest unit costs to the training providers – skilled technical work in large industrial firms. The supply of more costly training will tend to depend more than cheaper craft training, on the company's perception of its own future needs for skilled workers. Therefore, the government measures to raise the supply have effected increases disproportionately in the less attractive trades with shorter training. Reportedly it is also in these trades (usually crafts) that the risks are greater of apprentices being exploited as cheap labour without receiving training of adequate quality.

There is a major mismatch between the distribution of training provisions by trade, and job opportunities for those who have been trained. In 1980 small craft firms accounted for 40 per cent of all apprentices but only 17 per cent of the total labour force (Schober, 1984). Industry, commerce and public offices tend to take on no more apprentices than they expect to be able to employ later. In large-scale industry, some 80 per cent of apprentices are in fact later employed by the company in which they trained (Raggatt, 1988). Large companies view training of their future employees as a means of quality assurance of their future skilled core labour force: "*...the corporate identity, the reputation and relative market share of a firm all correlate strongly with the existence and defence of a skilled core labour force*" (Clement, 1985). Apprenticeship also functions as a means to reduce the risks in hiring skilled workers in that it gives industry a chance to try out prospective skilled employees. To supplement this core, they hire as unskilled workers those who have been trained as craftsmen in small firms. In this case too, having completed apprenticeship is probably seen as a sign of having not only skills but valued personal traits, thus reducing industry's costs and risks in selecting employees. Thus, a high proportion of those who have been trained in the crafts end up in industrial unskilled jobs which are poorly related to the trade in which they were trained.

Among the trades with a particularly large training surplus were: auto-mechanics, bakers, painters, carpenters (all male dominated) and retail sales and hairdressing (female dominated). In the late 1980s, there was also a considerable surplus of apprentices in the metal industries, relative to employment prospects (Schmidt, 1988).

Even when youth apply for work outside their 'trade', it is undoubtedly a competitive advantage to have completed an apprenticeship – it is reportedly taken by employers as an indicator of socialization to work. But apprenticeship is no guarantee of employment. In 1986, 40 per cent of the unemployed had previously been apprenticed (Lenhart, 1988). As the competition for jobs has sharpened, the proportion of workers who have completed vocational training has risen. "*While in 1970 only 50 per cent of all employed (including self-employed) persons had a formally completed vocational training, the figure had risen to 72 per cent in 1979, and among the 25-30 year olds even to 83 per cent*"(Lenhart, 1988).

These distinctly high 1979 figures presumably include not only apprenticeship but also professionally oriented education and training requiring higher education. Greinert (1992:84) refers to 1990 sources which show that *"90 per cent of young people entering working life nowadays hold vocational training or university qualification."*

The sharpened competition has also raised the de facto entrance requirements to apprenticeship, if not the official minimum ones. More general education is required to compete successfully for a place. Braun (1987) refers to a study from 1984 which shows that most students in the *Realschule,* not only in the *Hauptschule,* would like an apprenticeship place. Even in the traditionally university-preparatory *Gymnasium*, 15-20 per cent of the students then wished to secure an apprenticeship. In fact, by 1986 fully 60 per cent of the applicants for apprenticeship had the *Mittlere Reife* (*Realschule*-level exam). The 1980s witnessed also an increase in the proportion of apprentices who were *Abiturienten* (who had completed the *Gymnasium*).

The average age of apprentices has risen. In 1975, the average applicant was aged 16 years old. By 1984, the median age was 18 (Braun, 1987). Those coming directly from Hauptschule, especially if their marks are low, have become marginalized and have access only to the low status trades which have the poorest employment prospects – or they end up in fully school-based training such as the *Berufsgrundausbildungsjahr* (BGJ). In 1982, about 20 per cent of the age group were relegated to the BGJ – about 70 per cent of these hoped to eventually secure an apprenticeship (Lenhart, 1988). Among the 1985 apprentices, about 15 per cent had followed this path through the BGJ.

For many teenagers, apprenticeship becomes in effect a poorly paid socialization to working life 'in general' and not the acquisition of occupation-specific skills which they later will actually put to use. BIBB started in 1983 a study that followed up 10,000 apprentices at 247 *Berufsschulen* into the labour market after apprenticeship (Herget, 1987). Six months after completed apprenticeship, 69 per cent were in employment, 13 per cent were in full-time schooling, 9 per cent were in the army or doing service as conscientious objectors, and 9 per cent were unemployed. Of those who were employed, 78 per cent thought there was a good match between their work and their previous training.

This percentage (86) was especially for those who had found employment within the company in which they were trained.[14] But it was decidedly lower (about 50 per cent) among those who had found employment in another company. Von Gilardi and Schulz (1989:17) refer to findings from a large 1985 sample which showed that only "*50 per cent of those having completed vocational education found a contract of employment in the occupation in which they received training*". Another 4 per cent were able to find only a temporary job in their trade.

Taken together, these various studies from the 1980s indicate that it is not far off the mark to conclude that *not much more than about half of the apprentices of the 1980s continued to a 'relevant' job after they had completed their training*. Thus, the German case sustains the conclusion that the apprenticeship mode, when it is developed as a mass system, also can suffer from a loose connection between training and the kind of work which apprentices later find – like the school-based mode in Sweden.

The 'looseness of the connection' between training speciality and subsequent work may of course vary with general labour market conditions. It could be that both under very difficult labour market conditions (it is then difficult to get access to jobs in one's trade) and under very buoyant market conditions (it is then easy to find 'better opportunity' outside one's trade), the connection will be looser than when supply and demand are better balanced. It would for that reason be interesting to see trend data on the 'match' between training and work under changing labour market conditions. The connection might also depend on the extent to which apprenticeship is a *mass* system. *Ceteres paribus*, one might expect a tighter fit when apprenticeship is a small training enclave which is marginal to the whole national education and training system and therefore not exposed to social and political pressures to cater for the training needs of out-of-school youth.

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[14] Clement (1985) refers to a manuscript by K. Schober: *Aspekte der Arbeitslosigkeit Jugendlicher*. Nürnberg: Institut für Arbeitsmarkt- und Berufsforschung, 1985. In that study she presents data from 1980 which showed that 68 per cent of male and 56 per cent of female apprentices had become employed by their training firm, six months after completing their training. Most of those who left their training company did so voluntarily. The tendency to look for employment elsewhere was especially high in certain trades: agriculture, commerce, crafts, and 'personal service' occupations. But 65 per cent of those who left their trade, in the transition after apprenticeship, still thought that their training had been a quite useful background for the job they acquired.

But under the German conditions of apprenticeship on a large scale, it would appear that the cost-effectiveness of apprenticeship, just like that of school-based training, must rest to a great extent on the assumed benefit of training youth for other specialities than their eventual line of work. This assumption, which is part of the 'training ideology' that seems to prevail in Germany, is still awaiting systematic empirical research. If the 'transfer benefits' in fact turn out to be high, the noted 'loose connection' could indicate laudatory flexibility in the connection between training and work; but if the transfer value is low, then the German training system too has considerable problems in its external effectiveness.

2.3 Training employees

Such in-service training aims to serve a firm's own needs for staff development. The extent to which such training is organizationally differentiated from on-going production will vary both within and among firms.

At one extreme, there is informal on-the-job learning, e.g. new employees informally 'learning the ropes' of their job with some occasional guidance from supervisors and from more experienced workmates; or experienced employees receiving some short instruction in the use of some newly acquired technology. Each episode of deliberate training may be confined to a highly specific operation, but over time the blend of instruction and learning by trial and error can accumulate into a more general practical grasp to deal competently with a broad range of tasks and sort out unforeseen problems. The terms 'savvy' and 'knack' express the notion that such 'tacit knowledge'[15] is of great importance for productive work and at the same time difficult to identify and produce in formal training programmes.

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[15] It was the philosopher and natural scientist Michael Polyani who first coined the term 'tacit knowing' (Polyani, 1967). He stressed the importance of those aspects of competence which cannot be formally specified in programmed learning sequences but which refers to the acquisition of confident mastery of skills by bringing 'tools' (physical tools as well as symbols) to bear on varied practical tasks. A discussion of Polyani's concept and of more recent contributions to the literature on 'tacit knowledge' is given in Lahn (1992).

At the other extreme, company-based training of employees can be highly institutionalized, e.g.: training departments with full-time instructors running courses at a training centre. Sometimes firms within the same industry combine to run such centres (e.g. the Norwegian graphic arts industry). Such provisions may structurally resemble 'outside' institutional training;[16]and outside systems may serve as a framework of curricula and certification into which the internally conducted training of employees will fit – as in the case of Sweden in the 1960s when large industrial firms often ran their own vocational school. Companies may also 'buy in' training for their employees from outside public or private providers, either tailor-made courses or as sponsored training places in ongoing courses.

If a company has low confidence in the training which its recruits have received in outside institutions, internal programmes can give much attention to quite basic vocational skills, even basic numeracy and literacy. But usually, company training will simply build on the broad basic education and training which their recruits have previously received and concentrate on more specialized skill requirements of the company's production; additionally, companies may engage in training in order to prepare experienced staff for promotion. Such training for promotion may vary as to degree of formal organization, from sending staff on external degree courses to job rotation in order to give management trainees varied experience of different operations within the company.

In addition to skills, the aim can also be to build morale and identification with the company – to promote a culture of collective effort for improved productivity. Not only Japan, which will be discussed below, but also several of the newly industrialized on the Asian Pacific rim, have considerable industry-based training activity – with more government involvement in Singapore and Korea than in Taiwan and Hong Kong.

A common impression about industrially advanced countries is that the scale of internally conducted training of employees is large and growing. It is an important task both for research and governments to map the extent and nature of such training. But research on company-based training is sparse, and one should beware of exaggerating its importance across countries and types of industry, just because 'external' training systems are weak – as is commonly the case in developing countries.

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[16] In the USA there are large corporations which even run their own 'internal' university.

One would expect that a clear advantage of industry-based training is relevance to later work, and cost savings to government. But there is a lack of studies which investigate the extent to which the expected cost-effectiveness advantage of internal training of employees, as compared to external programmes, is realized. Employers should perceive a vested interest to ensure that training meets their needs and that training be efficiently conducted since they bear the direct cost. On the other hand, in capital intensive industries training expenditures may be marginal to total operational costs and thus not a central object of a company's cost consciousness. There could be risks of very high unit costs and much spare capacity when small-scale courses are run in top-heavy industrial training departments. One extreme example is the parastatal electricity generating company in Tanzania which reportedly has a higher recurrent budget than the University of Dar es Salaam.

Public authorities lack strong levers with which to influence the scale and contents of a company's internal training. The extreme 'internal-demand driven' character of such training isolates it from the external 'social demand' for education and training as well as from political direction that purports to be based on a more global assessment of the economy's overall training needs in the long term. Korea has used legislation in order to induce employers to provide a proportion of their workers with in-service training. The result has been an expanded scale of training, but "*its quality and usefulness are less than optimal*" (Charmes and Salome, 1987:9). The 1974 Law led to significant growth in training, well above that achieved earlier by incentives (subsidies to training). But after 1979, the numbers greatly declined until, during 1983-85, they seem to have stabilized at a level not greatly above that achieved under the subsidy scheme (Charmes and Salome, 1987). Since then, the scale of enterprise-based training is said to have remained at a disappointingly low level. The smallest firms especially seem to have been disenchanted with the scheme. Thus even in a country which has rapidly industrialized, with many highly productive industries, the risk is that compliance will be superficial and uneven if industry is required by legislation to take responsibility for training.

One would expect that a company's interest in training will depend on certain characteristics of industry, and on the business cycle. Expansion plans and adoption of new technology should generate interest in training. There are trade-offs between training and scale of staffing. Cheap labour favours high staffing levels rather than training. Employers may complain about low productivity levels, but can still respond to poor performance by other means than training (and higher pay): simplification of tasks, overstaffing and tight supervision (Kelly, 1986; quoted by Dougherty, 1989). Stable and 'simple' production technology, cheap labour and high staffing ratios, and low utilization of production capacity provide little incentive for training. Much of the industry in developing countries has these characteristics. In parastatal companies the pressure for efficiency is often low, and in-house training provisions can show low efficiency concerns.

Charmes and Salome (1987:10) in their survey of industry-based training in five East Asian countries conclude that there are three interrelated traits which strongly influence the provision of 'in-service' training by firms: ownership, size, and technology:

> "Government and foreign-owned firms are more likely to provide organized in-service training programmes, mainly because they are generally larger and more capital-intensive. Other things being equal, technologically-intensive firms are more likely to require workers to undergo in-service training programmes, both in and off the workplace, than labour-intensive firms".

Cultural tensions (e.g. ethnic divides between managers and workers) can adversely affect the faith that managers have in their workforce's trainability and capacity to take on more responsibility and thus discourage industry-based training. In some countries, a tacit political rationale for developing public training provisions has been the suspicion that owners and managers of industry restrict opportunities for advancement and on-the-job training to their own kith and kin, leaving only menial jobs to others.

Employers can be wary of paying for training which they think will give staff the wings with which to flee their company – or to set up in competition with themselves (in the case of small scale operators). Companies therefore have stronger incentives to engage in training which develop skills that are specific to their own work requirements than to develop and certify skills that workers equally well can make use of, equally well, in other firms. Similarly norms and expectations as to duration of employment will affect incentives for conducting training. There is a weak incentive to invest in staff whom a firm does not expect to retain long, but there is a strong incentive carefully to select and to train those who are hired with a view to long-term employment. In general, in-company training thrives best when owners/managers believe that a better trained workforce will make productive use of training for the company's long-term benefit. But one can also expect that good training opportunity within a firm will also promote staff morale and develop identification with the firm.

Some countries have imposed a training levy, e.g. as a payroll tax. To work as an incentive, a training levy must give exemptions or direct contributions to firms that train. But fiscal incentives for training work poorly during recessions. Thus, in Kenya, large unspent 'training funds' accumulated in the 1980s. During 1972-74 Taiwan also experimented with a training levy on companies employing more than 40 workers (1.5 per cent of the payroll) which was used to reimburse up to 80 per cent of training activities by firms. There too, the system was rendered ineffective by the economic recession at the time. In 1984, under more favourable economic conditions, a similar measure was reintroduced. As of 1987 the enforcement decree of the law was awaiting promulgation (Charmes and Salome, 1987). However, even in dynamic economies unspent training funds tend to accumulate. This occurred in Singapore during 1979-84 because dynamism too can set ceilings – firms can then be loath to take time off from production. Further, fiscal and legislative measures have rigidities which can make them irrelevant to a company's own needs.

Leaving training to companies can have social and political consequences which some groups oppose. The more that training is embedded in companies themselves (this also applies to apprenticeship), the more it can become a tool for taming and controlling the workforce rather than for simply making them more productive – though from an employer's point of view 'taming' can be an important prerequisite for productivity. This is one reason why labour unions and associated political parties have sometimes seen school-based training as an 'escape' from training conditions which have been too much on the employers' own terms and insufficiently attuned to the needs that workers have. A shortcoming of employment-based training is that opportunity is restricted to those who are already employed. Therefore, one cannot rely on such training in order to promote better equality of opportunity among groups in the wider society. Training will also be unequally distributed *within* industry.

Public policy and industry may differ in their main target groups for training. Governments tend to give primacy to basic training whilst companies may be more concerned with the training needs of those in positions of greater responsibility within the firm: supervisory staff and those earmarked for management jobs – not the ordinary workers. Singapore runs a Skills Development Fund levy on employers and makes available grants from this fund to approved employers and training organizations. Large numbers of workers and firms have taken part in this training activity, but the scheme has tended to operate in favour of highly-educated workers and large firms – rather than the target groups which were set for the Fund originally (Charmes & Salome, 1987).

A general observation is that willingness and capacity to train are unevenly distributed and favour larger firms, and that the employees who tend to make most use of training opportunity are those who already have a high level of education/training. Rather than compensating for inequality in the formal education system, 'non-formal' industry-based training provisions may therefore exacerbate inequality, adding further training to those with the best skills in the most advanced industries.

In developing countries, industry-based training is usually quite rudimentary. It would therefore be dubious logic to argue that weaknesses in school-based training mean it is better to leave it to industry. It is precisely because industrial development is lacking and weak to begin with, that industry's capacity and willingness to train also will be restricted. Nonetheless, compared to other modes, company-based training of employees probably tends to be both cheaper (at least to government) and more directly adapted to short-term change in industry's requirements.

2.3.1 Education and training in Japan

Japan is known for the continuous and unusually pervasive training which occurs within the large companies. Technical training and socialization to the company as a community are closely intertwined. Though there are numerous separate 'training and learning events', much deliberately organized learning is so closely related to the arising production tasks that it is not reflected in any separate training budget or in the work of an institutionally separate training department. Further, much learning occurs by self-study, individually or among members of a work team. Youth receive an unusually rigorous general education before entering the labour force, but pre-employment vocational training is conspicuously unimportant in this industrially dynamic society.

The cultural tradition, derived from Confucianism, Buddhism and Shinto, emphasizes both the importance of achievement and that a person has diffuse and enduring obligations to his/her groups – the family, the school, the company. To do poorly in school is to bring shame upon one's family and also to let one's teacher and classmates down. Similarly, failure to master the tasks at one's place of work is to let down one's workmates and the wider community of one's company – as well as one's family.

The strong and diffuse obligations apply both to one's equals, and to superiors and subordinates within the group to which one belongs. To illustrate the extreme extent of teachers' obligations to their pupils: school classes are large, usually 40 pupils. Even so, teachers in the basic school (this may also occur in high school) visit each pupil's home at least once every year to familiarize themselves with the pupil's home conditions and discuss conduct and school work with the parents. Often, teachers take pupils on excursions and camp out with them for three-four days (Shimahara, 1986). The Confucian and Buddhist ideal has been that the relation between pupil and teacher should be that of disciple and master – a tradition of mutually diffuse obligations. Tellingly, Japanese pupils are responsible for the daily cleaning of their school and classrooms, a tradition dating back to the Buddhist temple school (Okihara, 1978).

In explaining success and failure, innate ability and environmental constraints are both played down. Takeuchi (1991) writes:

> "Most Japanese conceive of effort as a crucial factor for academic achievement. Ability is conceived as being transitory and subject to change..People are reluctant to admit innate ability in determining academic achievement... Intelligence tests have never become popular in Japan."

Rather, there is a strong belief that one can excel in the face of adversity by dint of hard work and sustained effort. In this view of human nature,a condition of 'disadvantage' does not justify failure; for by overcoming handicaps one develops and shows spiritual strength to persevere and prevail (*gamburu*). The common view is that: "*achievement comes from effort, individual diligence and self-discipline ...This assumes that performance can be improved in subsequent trials*" (Shimahara, 1986). One example of such repeated trials is the widespread retaking of exams in order to improve one's performance. Another example of the value placed on *gamburu* is the initiation programme which a bank runs all new recruits through: a two-month course which culminates in a gruelling hike '25 miles long, from 7:30 a.m. to 2 p.m., under the hot sun, no rest or drink'. These austere and ascetic values are, however, in the Japanese tradition balanced by the 'soft' values of co-operation and responsibility for others, politeness within defined spheres of human relations, and by the value placed on aesthetic cultivation.

The way that Japanese children are educated is part of wider patterns of socialization which must be the key to Japanese industrial dynamism. Very likely, no society devotes more time and disciplined effort to school and work than Japan. The results are high standards of cognitive achievement, especially in such linearly structured subjects as mathematics and physics. In international studies of cognitive school achievement conducted by the research programme International Evaluation of Educational Achievement Japan has repeatedly stood out as a high achieving nation in mathematics and natural science.

In Europe, it is Britain that stands out as a country where children start school early (at age five) and have long hours (six+) at school. But a Japanese 12-year-old, who started school one year later, has received as many class hours of teaching as a British 14-year-old (Dore and Sako, 1987). By Western standards, the style of teaching is traditional: 'frontal' teaching, much homework, large classes (about 40), great stress on mastering factual contents, and great pressure of exams. In addition to school, 80-90 per cent of families buy *juku* (private lessons) for their children. *Juku* is common, not only in exam subjects, but also in sports, music and art. It is not unusual for pupils to spend an average of five hours each afternoon, three days a week, on such private lessons (McCormick, 1988). There is not much time for leisure; Saturdays, and much of Sundays too, are devoted to school work. There is a whole industry of *yobiko* ('cramming' schools) attended by youth who will retake their secondary school exam in order to boost their marks and their prospects for admission to the 'right kind' of college or university (Shimahara, 1978; Tsukada, 1988).

Japanese educators – not least the traditionally militant Japan's Teachers Union – are worried about the pressures and mindless cramming for examinations at the end of junior secondary school and high school (Shimahara, 1978). In current policy debate there are calls for more individualism, 'creativity' and internationalism. But the style of teaching and learning that has been followed must nonetheless have been highly functional for the economy. In mainstream western theory the powerful currents of Romanticism, Naturalism and Freudianism have all seen strong repression of impulse as stunting for 'personal growth' and creativity. Rather, these currents have assumed that true self-discipline is best achieved when education is centred on each learner's active interests. In many respects the case of Japan is therefore felt to be a provocative one by western educators steeped in that tradition. In defense of western assumptions, there has been a tendency to see Japan stereotypically as a highly regimented society lacking in creativity. But at least the argument that Japanese industry is short on *technological creativity* must now lack credibility. Innovation and creativity are also processes which require perseverance and concentration on task, something which may have failed to be duly recognized in much western educational theory.

Japan has a more equal income distribution than most industrial countries (Cummings, 1982:17). It has also nearly universal 'high school' attendance to age 18+, and a higher education system which is fairly open in that it enrols more than 40 per cent of the age group. But there is nonetheless an acute awareness of the role of exams in allocating life chances. There is a norm of life-time work with the same employer, especially in the large companies. Therefore, one's first employment is often the arena for a whole career. Certainly this is true for the most coveted employment arenas. Since companies recruit staff for a lifetime of employment, they are looking for people with the right personal qualities. Employers value good exam results as demonstrated ability to master difficult learning tasks.

The most desired careers are in the top companies which recruit from the top national universities. Though universities select students strictly according to results in public examinations, the exam successes of different secondary schools are well known. Thus, within each stage of secondary education (12-15, and 16-18) schools form a finely graded hierarchy as to perceived quality, both in terms of exam results and what it takes to get admitted. This is especially true for the high schools (16-18). Parents and pupils are highly conscious of these hierarchies of institutions. At the crucial points of selection (to high school, and for many young people also to university), extensive use is made of mock examinations in order to more accurately inform the student as to which institution he should apply, in order to stand a good chance of being admitted, and at the same time, make the most of his level of achievement in the final exams. These mock exams serve as a device by which youth adjust their future ambition. But for those who refuse to lower their sights after disappointing exam results, there is a whole industry of private cramming schools (*yobiko*) that over one or two years prepares youth for repeating their high school exam in order to improve their results (Tsukada, 1988). In 1975, such *'ronin'* youth (the term originally referred to samurai warriors who had lost their liege lord) constituted fully 40 per cent of the university intake.

At age 15+, about 95 per cent of the age-group continues to upper secondary education. In this highly industrial economy, it is general education, not vocational training that dominates. Nearly 75 per cent of youth go to general high schools and follow a general education curriculum; a proportion which has increased from 60 per cent in the mid 1960s.

Vocational high schools now receive about 20 per cent of the age group. Though these vocational high schools are clearly seen as inferior to the general high schools, and have lost ground in the competition for 'good' applicants since the early 1960s, these schools too convey the impression of institutions in which teaching and learning are taken seriously – they may be 'inferior' but they are not demoralized. Their standing is best in rural areas and in districts with less than average university attendance (Dore and Sako, 1987:13). But in the various 'vocational' lines, general subjects are strongly emphasized; they take about half of the timetable (considerably more than in the Swedish vocational lines). The lines with the largest enrolment are commerce, mechanics, agriculture and home economics. The lines that receive students with 'the best' exam results from junior high school tend to be computing, electronics, and mechanics.

But these rather general vocational lines do not usually lead to work in the same vocational specialties. It could be that the connection between what is studied as a broad speciality in these schools, and the nature of later work, is even looser than in Sweden. Inoue (1985:13) concludes on the basis of findings from a number of surveys done by others:

> "Vocational courses...do not play a significant role in producing skilled manpower. ...Among those who take upper secondary engineering courses, only 43 per cent become plant workers ...most entering plant workers come from other courses ... it is almost the same for office workers... Only 30 per cent of upper secondary leavers state that their occupation is very or somewhat related to the subjects they study in school."

It would appear that like the general high schools, certificates from vocational high schools function as information about the extent of demonstrated general 'calibre' of disciplined achievement. Like other high schools, the vocational ones strive to establish favourable placement relations with companies in order to promote their students' career prospects, but the students whom the companies recruit through such special links may often be deployed in work that is weakly related to the vocational line from which they come.

Outside the 'high school' system, there are some more specialized vocational schools and a five-year school for training technicians. The latter have been more popular than the former but their combined scale of enrolment is minuscule compared to the high school system.

Higher education is dominated by courses in arts and social science, not by professionally oriented subjects. Even in technical subjects, teaching and research stress theory, not application and development work (Dore and Sako, 1987). Most graduates from higher education enter office or sales jobs without any professional training. But in spite of these weak connections between what is studied – both in schools and university, and the students' later work, complaints from employers about the irrelevance of what is taught are *"conspicuously absent in Japan"* McCormick, 1988).

There are also vocational courses run by other ministries than the Ministry of Education. These courses usually require a completed high school education. Thus, the Ministry of Health has its own schools for nursing; the Ministry of Transport runs schools for seamen; the Ministry of Buildings and Works runs courses for the construction trades; and the Ministry of Industry and Exports has provisions for promoting technical training in the biggest industrial cities. Traditionally, the Ministry of Labour has been quite active in running training for the construction trades, painting, carpentry, plumbing and electrical installation. The special schools run by this Ministry played a more important part in the 1950s and 1960s when half the age group left school at age 15+. But in recent years these courses, which have been biased towards craft occupations, have suffered from inability to attract enough applicants to fill their capacity. Since 1981 the Ministry of Labour has also started up some labour market training courses for unemployed school leavers, but reportedly with limited success in enhancing their employment prospects. What characterizes these diverse provisions is that they together enrol only a very small proportion of the targeted age groups, and that in keeping with norms of a strong corporate identity for each Ministry, there is little cross-ministerial coordination of such provisions.

The main providers of *school-based* vocational training, after high school, are private 'special schools' which are subsidized (since 1975) but only loosely regulated by government. They advertise their courses aggressively, are generally 'demand driven', and offer courses of varying duration (Wilms, 1990:36-43). They have few if any admission requirements and pay scant attention to formal qualifications when instructors are hired. They run day-courses and evening-courses of varying duration (from a couple of months to a year). Most schools teach only one subject, but together they cover a wide and changing range that is a mix of vocationally oriented courses (e.g. computing, electronics, nursing, agriculture, education) and courses geared to leisure activities (music, art, flower arrangement, the tea ceremony) (Wilms, 1991:36-40). To qualify for government support they are not supposed to be run for profit, but they have acquired a reputation for free-booting entrepreneurship. There are schools which have falsified their enrolment registers in order to obtain more than their due government subsidy. Others have suffered losses from tuition monies which have been invested in the stock market. These private schools have come to play an important training role for those who are employed, or seek employment in small firms, and especially for the great many jobs which are not so clearly on an expected 'employment for life' trajectory.

But the main arena for vocational training in Japan lies within industry itself and within the public services, but mostly within private industry. Japan has a distinctly 'lean' public sector. In the early 1980s the public sector employed only 3.6 per cent of the labour force (Inoue, 1985). Private industry, which employs 85 per cent of the labour force, is dominated by large industrial combines with associated subcontractors and produces more than 90 per cent of the GNP. In the large companies, which employs about 30 per cent of the labour force, 'employment for life' is a strong norm, felt to be binding on both employer and employee (McCormick, 1989). This norm means that companies must recruit workers with a view to their potential for long-term learning of productive skills. This is one reason why *"Japanese firms do not respond to recession by cutting training budgets, but by putting surplus man/hours to improving skill levels"* (Dore and Sako, 1987:7).

As in learning in schools, socialization goals are strongly stressed in the staged learning environment of a company – appropriate values and attitudes are seen as important prerequisites for motivation to learn and work hard. Typically, new employees go through an intensive initiation programme which stresses a 'company philosophy' of public service goals, pride in the company, self-respect, duty and responsibility. By such techniques as rituals, a period of relative isolation from the outside world, and the staging of shared ordeal-like experience, attempts are made to build strong social bonds among novices to the company. Some firms require novices to live in company-provided boarding during their first year. Every year or two years, employees attend special seminars which highlight and hold up for wider acclaim the importance of the work of their team to a company. Role play and sensitivity training are among the methods used in such seminars, especially for managers. During the work week, long work hours are frequently followed by hours of further socializing. A manager may invite each of his employees for a special lunch on the employee's birthday. Leisure activities are organized in order to include the workers' families in the life of the firm. Companies demand willingness to work long hours, to extend and change jobs, and to master new technology. Work groups form 'quality circles' which meet, outside of work hours and without any extra pay, to discuss how to improve efficiency and quality in the production process. Their recommendations are usually followed up and implemented (Inoue, 1985:40).

Much technical training occurs as informal guidance during work, by self-study of manuals, and by correspondence courses. There is now a tendency to buy in more training from outside the company, but mostly technical training is internal and occurs in close connection with production – technical seminars, quality circles, job-rotation, self-study. There is systematic training in new technology. First, the production engineers will train those workers who will have the greatest responsibility for using the new technology, then these senior workers will in turn train others in their work group. This procedure exemplifies a general trait: what is stressed is the responsibility which supervisors have for training and guiding their subordinates. Thus, much training is built into the work groups which are established for production purposes – groups which typically are given considerable latitude to decide how to organize the work they have been collectively assigned.

As a result, the extra resources which are separately budgeted for training are often relatively modest compared to the scale of actual training activity (McCormick, 1989). In addition to the cost of training that is 'hidden' from any separate budgeting because it occurs in such close integration with production itself, there is the 'cost' of the great deal of time employees spend on self-study and training, individually or in groups, outside of paid work hours. Dore and Sako (1987:114) suggest that if one were to attach an hourly wage in order to cost this contribution, the total might exceed the training cost directly incurred by industry, probably also the combined public expenditure on school-based vocational training.

A large and varied network of industry associations set norms of technical competence and administer proficiency tests. These tests serve as an incentive and backup for learning technical skills. The tests have impressively exacting requirements (not only skill but also theory) and serve as a means of quality assurance within the company, not as credentials which an employee may use to find jobs outside the firm. In industry, the test certificates typically relate to quite specific areas of skill, narrower than a whole 'occupation'. Thus, a skilled worker may take a series of tests to cover a broader area of tasks (Dore and Sako, 1987). To remain valid, these proficiency certificates need to be regularly renewed. Skilled workers are expected to take such tests, but passing the test gives no entitlement to special remuneration. Naturally, diligence in taking tests may enhance career prospects within the company (though pay and promotion goes much by seniority). But the pursuit of proficiency certificates also reflects pride in 'improving oneself',displays *gamburu* in overcoming difficult tasks, and is a means by which obligations to one's work group are acted out. The company gives guidance on skills practice for proficiency tests; but much preparation is done by self-study of special manuals and textbooks after work hours.

In recent years, the government has also become strongly involved in support of such testing, especially in extending the use of proficiency tests to the private 'special schools' outside of industry as a means of quality assurance in that brashly entrepreneurial sector. Some of these external tests cover a broader range of skill more akin to a 'whole occupation', e.g. a test in hairdressing. Government also helps finance and guide collaborative vocational training among small firms. But the government assistance is clearly only supplementary to the efforts made by industry itself.

The system of proficiency certificates matches the way in which work is organized in Japanese industry – not by stable and fixed 'occupations' but by tasks which change throughout a career in the firm. Thus, work tasks can evolve without the constraints of 'occupation' to take account of a person's strengths and the company's needs. The problem of 'demarcation disputes' does not arise. The identity a person has as an employee with a certain company is strong; but the occupational identity is weak.

In vocational training, it means that access to valued training opportunity follows access to valued career arenas. If you did not do well in school (or failed to get into the right kind of high school) access to these most valued career arenas tends to be irrevocably blocked – though exams can be retaken; and improving one's score may be a sign of true grit that others respect. The values of individual freedom and equality of opportunity regardless of group affiliation find rather weak support in the Japanese cultural tradition. In spite of the universalistic fairness of the exam system and its crucial role in social selection, there are groups which nonetheless are discriminated against in access to the valued career and training arenas – especially the 50 per cent of the population who are women. In Japan at present a shortage of labour is beginning to open more widely for women the doors of employment opportunity. But much of this occurs in the less valued career arenas – the kinds of jobs for which the private 'special schools' seem to play an increasingly important role. Japan now exerts considerable international influence on ways of thinking about management (the emphasis on 'company culture') and about education (back to basics, how to maximize time on task as a proportion of classroom time). Its influence is also felt on vocational training. A clear recent example is the main thrust of the World Bank's (1991) recommendations on policies for vocational training in developing countries: strengthen the quality of general education in the schools, prioritize in-company training, encourage private institutional training. In so far as training policies move in this direction, it remains to be seen how they will work without the strong cultural supports which this strategy has had in Japan. It could be that the Japanese success in industrial development has led to uncritical faith in the possibility of transplanting features of its mode of vocational training to other countries, just as the economic pre-eminence of the USA in earlier decades helped propagate the view that vocational training should be integrated in comprehensive secondary schools.

Chapter 3
Trends and conclusions

3.1 Comparing modes – Sweden, Germany and Japan

Swedish training provisions have in the past been shaped by political goals which have stressed egalitarian integration of social groups into the wider society. In terms of socialization goals, the 'strong social category' that the training policies has sought to promote and cause identification with, is indeed a 'global' one – ***citizenship in an egalitarian social order.*** In Germany, the training ideology stresses socialization to an *occupation*, not only for the sake of productivity, but also as a means by which a person finds his place in the social order and accepts its legitimacy. In Japan, vocational training meshes with unusually all-embracing socialization to *the company*; by learning and mastering work tasks, employees act out strong social obligations to the work group and the wider community of the company. Thus, in all three countries, vocational training serves integration purposes, but the focus of such integration differs among them – respectively: the society, an occupation, a company. In so far as ideology shapes reality – and this is clearly problematic – one would expect that first Japan, then Germany and Sweden would form a rank-order as to the extent to which training results in an unconditionally accepting attitude to the demands of work. It would be interesting to see comparative empirical research on this hypothesis. Are Swedish skilled workers in fact less strongly committed to work than their Japanese counterparts? Further, are Germans more 'occupation conscious' than workers in the other two countries?

The strength and organizational structure of trade unions will shape the nature of vocational training policies in a country. Swedish unions have long been industry based. They are also very powerful. Strong industry-based unions tend to distrust employer control of training. Though large, industry-based unions also now dominate in the German structure of unionism (e.g. the metal industry, the construction industry, the chemical industry), historically they have probably evolved more from craft and trade unions[17] – a tradition which favours apprenticeship. In Japan, unions are distinctly weak; the dominant mode of worker representation is company unions where both managers and workers belong. A comparative study on the connection between labour union structure and the unions' policy on training might generate interesting findings.

In order to have a larger pie to distribute more equally, efficiency, not only equality, has admittedly been a declared aim of Swedish policy. But what is emphasized in Sweden is the rights of employees. The claims which a company can make on its employees are constrained by public regulation and union agreements. Leisure is guarded against undue incursions from the demands of work. In the 1970s Swedish policy even sought to give pupils – like their parents – regulated work hours by shifting homework to study-periods at school. In the 1968 reform, vocational education lost workshop periods for the sake of giving students equal work hours with general education. In terms of the emphasis on work, the contrast with Japan could not be sharper. There, pupils undoubtedly have more homework; and in employment, both work and on-the-job training extend beyond paid work hours without any extra remuneration. Further, Japanese companies seek to involve their employees' families in support of the company.

In many countries, analysis of training provisions points to the problems of excessive duplication and lack of national co-ordination of provisions which are run by different agencies. It is interesting to note that here the rank-order among these three countries is probably reversed: Swedish policies have repeatedly shown strong concerns with a unified national system. In Germany responsibility for training is fragmented by its division between Chambers of industry and the *Länder*, with weak central co-ordination. Public and central co-ordination is still weaker in Japan.

Yet, Japan demonstrates that strong national co-ordination is no prerequisite for what in that country must be outstandingly effective vocational training.

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[17] This is a hunch in need of further exploration. But the contrast with Sweden applies at least to Denmark which has a stronger tradition of craft unions as well as a vocational training system in which apprenticeship has been the dominant form.

The overall unemployment rate during the 1980s in percentage of the labour force averaged 2.1 per cent (Sweden), 5.5 per cent (Germany) and 2.5 per cent (Japan) (OECD, 1991a:7). In more recent years, unemployment in Sweden has risen sharply and was 5.3 per cent in 1992. In Germany it was 6.6 per cent in that year and in Japan it was 2.1 per cent (OECD, 1993). There are definitional problems in comparing these rates among the three countries, but Germany (certainly post-unification) and recently also Sweden suffer relatively 'high' rates of unemployment. In Japan, much stronger norms of 'lifetime employment' serve to cushion those already employed against risks of redundancies during economic depression. High rates of school enrolment among youth keep those enrolled off the labour market and so help to reduce youth unemployment.

The definitional problems also apply to comparisons of youth unemployment, so that the following figures (extracted from OECD, 1990 and 1991b) are only very rough comparative indicators of levels in the late 1980s[18]:

Country	Unemployment rate Total	Unemployment rate Youth*	Unemployment among youth* as per cent of total unemployment
Sweden (1989)	1.4	3.0	35.9
Western Germany (1987)	6.8	8.1	17.3
Japan (1989)	2.3	4.5	25.4

* 'Youth' refers to ages 15-24 in the case of Germany and Japan, 16-24 in the case of Sweden.

One notes that the overall unemployment rate was then comparatively high in Germany – also for youth. In spite of this, as a percentage of total unemployment that among youth was clearly lower in Germany than in the other two countries. If other OECD countries are included in the comparison, Germany still stands out in this respect. The ratio of youth to total unemployment rates was in 1987 1.1 in Germany, whilst the average ratio for 14 other OECD countries surveyed (OECD, 1991b: 41) was 1.9 (mostly 1989 data). This difference is so strong that one can consider it to be real, in spite of the problems of comparability in the statistics. It is reasonable to infer that the apprenticeship system is one major explanation for this pattern – that apprenticeship has served to cushion the forces which elsewhere have driven youth unemployment up to much higher levels than unemployment for older persons.

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[18] The German figures refer to the old Federal Republic, prior to unification.

International analysis of vocational training often notes that many students from the vocational lines in 'comprehensive schools' do not find 'relevant' work later. The suggestion is that both specialized vocational schools and apprenticeship stand a better chance of being taken seriously by employers. The vocational lines in Swedish upper secondary schools fit this pessimistic conclusion about training in comprehensive schools. So do the very 'general' vocational high schools in Japan. But German apprenticeship training, highly specialized and mainly based in companies – or in training centres run by associations of companies – shows the same weakness, especially in those trades in which government incentives and pressures have led to expanded intake. One may infer from this noted loose connection between type of training and type of later work, that any large-scale pre-employment training should teach skills which are 'portable' (Bowman, 1988) across a range of occupations. But the important question, yet to be addressed by research, is whether this is best achieved by training in depth (de Moura Castro, 1988), as in Germany, or by training becoming more general, as in Sweden. The answer one gives to that question will also influence the judgement one makes about the kind of training which best prepares youth for technological change. What balance of general education and technical theory on the one hand, and practical skills on the other? What balance between breadth and specialization? What balance between attitudes to work, on the one hand, and skills and knowledge on the other? These are important questions for policy in all these three countries – and in others. Whilst research and observation of trends may suggest that one should beware of both 'narrow' apprenticeship and of vocational schooling that is detached from the context of real skills application, there are genuine differences in the informed judgements which are made about what balance to strike on these questions.

One notes that in all three countries, the intake to vocational training has become based on a longer period of general education in school. Not surprisingly, reviews of research from many countries confirm that employers value such 'general' traits as good numeracy and literacy, ability to learn, to work hard and independently, and to co-operate with others (Noah and Eckstein, 1988; Oxenham, 1988). They will also value general secondary schooling as a foundation for training, when they believe as they clearly do in Japan – that school succeeds in developing and grading such traits. The norm in these three countries is to stay on in full-time schooling beyond the end of compulsory education. Even when employers suspect schools of being too slack, as some employers in Germany and Sweden probably do, they will prefer to take on for training those who have had more schooling because the alternative has become to recruit from the minority of negatively screened early school leavers.

3.2 Policy trends

An evolutionist view is sometimes advanced about training policies: that different modes of training correspond to stages of economic development – suggesting a 'one best system' for modern economic dynamism. According to Hultin (1988), with economic development, policy will shift from training at a young age in skills for specific occupations (such as apprenticeship), towards broader training to be provided in comprehensive secondary schools. This would be supplemented by training of employees in industry-based training centres. This view would fit Swedish policies quite comfortably. Conversely, the recent World Bank policy paper on vocational training (1991) suggests that public, school-based training will – and should – give way to private and industry-based provisions as economies develop. In this 'free market' evolutionism the role of public training provisions is an inevitably receding one.

Internationally, the most visible long-term trends are rather different from these contrasting hypotheses of evolution. One sees quantitative growth, a more differentiated system, and more general education before training commences. The scale of industry-based training of employees may have expanded greatly in recent decades (this remains to be mapped), but as a complement to growth in public training provision, not as a replacement for pre-employment basic training. With economic advances, there is in fact no 'withering away' of public provisions. Further, training is in fact quite differently organized in countries thought to be especially industrially advanced, as illustrated in the cases of Sweden, Germany and

Japan. No simplistic notion of evolution as to modes of training, or the role of private versus public provision, seems to fit the long-term trends to date.

There is much variation in policy among developing countries. China has been de-emphasizing apprenticeship and has promoted school-based training, having sought to make 50 per cent of secondary enrolments vocational or technical by 1990 – though it has also sought to retain strong connections between these schools and industry. In African countries there is much disillusionment both with the high cost and low external efficiency of technical secondary schools. Kenya is turning technical secondary schools into more specialized technical training schools again, reversing the academic drift which made these schools 'secondary' to begin with. Though pre-vocational subjects are no longer in vogue, it is a policy which is most reluctantly abandoned once it has been embarked upon, for its rationale involves strong values and aspirations in the pedagogic and political culture of many countries. After earlier decades of policies which asserted the role of the state, with much optimism about the responsibility that the state could and should take on for public services, many developing countries are now keen to shift more responsibility for training on to employers and communities simply because of the high unit cost of training. But employers and communities have limited willingness and capacity to take on the augmented responsibility which politicians now wish upon them.

Among industrialized countries, there are some points of short-term convergence – with implications for the policies which these countries now wish upon recipients of their development aid. Attempts are made to involve employers more in institutional training. One example is to make training more directly accountable to local employers (e.g. the United Kingdom), and encouraging training institutions to sign training contracts with local industry. In the most clearly 'school-based' systems (e.g. Sweden) the trend since the late 1970s has been to strengthen placement in industry, and to recognize more clearly that institutional training does not give adequate 'entry-level' skills; it needs to be supplemented by on-the-job experience and training. On the other hand, countries with strong apprenticeship traditions (Germany, Switzerland, Denmark) have sought to broaden the specialities by reducing the number of trades and developing an initial 'school-like' foundation period. Countries which have mainly depended on industry-based training in employment (Japan, Korea) have sought to strengthen such training by legislation, incentives, or supplementary institutional training.

Thus, school-based training is reaching out to form better links with industry; apprenticeship training is becoming less narrowly based with a greater role for institutional training; and public authorities are intervening more in systems which have relied on industry's own internal training. In policy rhetoric at least, there is increasing recognition that any initial training, regardless of mode, needs to be supplemented by training on-the-job or between jobs. Thus, the short-term policy trends have in recent years favoured mixed systems in that there is now more recognition of the need to ensure that different agencies complement each other's role. There is less stable, and less tightly defined separation of contents and clientele among different school and training institutions (OECD, 1989).

The present trend for public provision favours models from private enterprise. 'Customer-orientation', concern with 'flexible response to changing demands', and 'cost-effectiveness' are recurring terms in much policy rhetoric. Thus, there is emphasis on gearing training more to effective labour market demand, active marketing of courses, cost-consciousness, more power to managers, use of 'performance indicators', stronger 'accountability' to local boards with heavy industry representation. Like all vogues which arise in reaction to the weaknesses of earlier arrangements, time is likely to show that this trend too will be modified because of unforeseen weaknesses. It is hazardous to presage what will shake down as its more enduring elements.

3.3 Management and co-ordination

These trends in industrially advanced countries require sophistication in planning and management at all levels, especially by institutional managers. The managers may well need more freedom from centralist directives, but equally they need more competence in order to move beyond the static concept of 'administration' to the more dynamic 'planning and management'. To the extent that training institutions themselves are to become more like enterprises, they will need both to develop strong management and pay more attention to 'institutional development' strategies, and to devise ways of handling the tensions between strong management and the more participatory 'institutional development'.

A country's managerial capacity for developing and running a vocational training system will be related to its general industrial and technological development. Even without entrepreneurial marketing of courses or physical products, vocational training is typically a more complex pedagogic system than general education in terms of the inputs to be procured and deployed – the matters of staffing, cost, equipment and consumables, curriculum and materials. Also, there are frequently problems of low status and morale. The preconditions for 'success' are therefore complex – it is not just a question of finance. Vocational systems are short of the management skills with which to cope with all these problems.

System-wide planning of training may be impeded by division of operating and supervisory responsibility among several ministries. Commonly, a Ministry of Agriculture will run courses and extension work related to farming, fisheries, and forestry; the Ministry of Labour operates training for craftsmen and skilled industrial workers, and the Ministry of Education runs pre-vocational courses, technician training, commercial training, and post-secondary courses. If institutional training is to be followed by in-plant training in industry, private firms or public parastatals will also be involved. Large parastatal services (railroads, postal service, electricity supply) will usually run their own training. It is sometimes argued that such multiplicity of courses (and credentials) spells poor utilization of a country's training resources. Yet, the example of Japan shows that what must be considered a highly successful pattern of vocational training can coexist with a high degree of compartmentalization of training responsibility.

Division of training responsibility on many agencies need not simply result from empire building and lack of co-ordination. The case for 'separate' provision is also based on uniqueness and scale of 'own' training needs, and sometimes on desires to promote strong institutional or sectoral occupational identities (as in the case of different Japanese Ministries). There are countervailing 'integration' arguments: on the one hand the argument for a more nationally integrated training system (under one Ministry of Education), on the other hand the argument that training needs to be closely integrated to its particular sector of skill application and to other support services for that sector (e.g. agriculture). Large technical services, just like large private corporations, may have special and large-scale training needs. Further, if the 'main' system fails to deliver adequate quality in basic training, large technical services have a stronger need to build up their own system from a quite basic level of skill.

A minimalist response to problems of fragmented efforts is to create liaison committees or advisory 'National Training Councils'. But unless they are given control of resources, such bodies usually lack authority. A stronger response is to establish Councils which have control over resources and some direct jurisdiction over training activity. Examples from East Asia are The Vocational Training Council in Hong Kong and the Vocational and Industrial Training Board in Singapore (both with extensive jurisdiction), and the Vocational Training Administration in Taiwan. At present the Government of Tanzania is considering the establishment of a National Training Authority with planning, co-ordinating and, crucially, *financing* authority, as part of a reform proposal which would also delegate operating responsibility to regional boards with strong employer representation.

If training institutions are to respond more 'flexibly' to changing demands put upon them, it is said that decentralization of decision-making is required. But decentralization is a vague concept because it merely means a shift in the distribution of authority away from a central agency or 'top level' in an organization. It begs the question of which 'local' groups will get more authority. As the scale of training grows from a few institutions into a national system, the sheer volume of decisions makes it necessary to off-load authority from the central agency onto institutional management or local boards. But more freedom from central authority is no guarantee of institutional dynamism, it can simply entrench inertia – and in some countries better shelter local corruption.

One alternative to central control that seeks to reduce the risk of *local* bureaucratic inertia is to shorten the lines of external accountability by making training institutions directly responsible to their outside 'users'. Making training more accountable to users becomes important when external efficiency is poor. Within the institution, 'user control' may require or imply a pro-active, 'businesslike' style of management. How 'user control' will work in practice will also depend on how far the 'users' will have the competence, interest and energy to involve themselves in the boards of management.

A contrasting variety of decentralized 'improvement' is *institutional development* which seems more in the tradition of the Human Relations school of management theory, but with stronger emphasis on goal orientation. Rather simplistically, this means involving all staff in genuine discussion about the goals of the organization and how these goals can be reached, and taking the personal needs of staff seriously. The aim is to nurture an 'institutional culture' which promotes task-engagement in harmony with satisfying the personal needs of those who work in the organization. To the extent that it succeeds, and manages to reconcile organizational and personal needs, it would seem to go with a high degree of professional autonomy for each training institution. Possibly, this approach lends itself primarily to the quality improvement aspect of 'internal efficiency'. If user control is a 'hard approach' – seeking to make managers and staff more directly accountable, keeping them more on their toes – then 'institutional development' is a 'soft approach' with faith in developing the inner springs of professionalism.

These two examples of approaches to 'decentralized improvement' suffice to show that decentralization is a cloak of many colours. What will work best, as an alternative to statist centralism (which few now defend) will depend on local circumstances, e.g. the competence and integrity of managers, training staff, and 'outside' local representatives alike. In many low-income countries, officials and employees spend much time in the 'grey economy' in order to supplement their meagre salaries and make ends meet. Decentralization policies must take account of this fact, for it raises questions about how much effort and involvement one can expect, who should be trusted with what accountability for a cash flow, and what incentives are needed better to bind time and efforts to the task of training.

3.4 A comment on policy choices

Even without the additional demand that they be run 'like a business', vocational training systems are complex and place great demands on management at all levels. Specialized training institutions – which are detached both from general education and from the workplace – can probably be developed and managed more easily than either systems which are integrated with general education or those that seek to integrate training with existing production. It is likely that integration with general education is the most expensive of these variants, and that grafting training onto production is the cheapest.

The drive to 'diversify' curricula in developing countries, and also the recent injection of 'technology' into mainstream secondary schools in some industrialized countries (e.g. Britain) are based on the assumption that economic dynamism requires an education system that stresses technology and vocational subjects in its broader enrolment streams. It takes but a quick comparative look to question that assumption. For example, pre-vocational 'diversification' has played a very minor part in Japanese schools (McCormick,1988). Similarly, in the Republic of Korea – a very successful newly industrialized country one is told that (Charmes and Salome, 1987:29): *"The curriculum up through the secondary level stresses the liberal arts and social sciences and aims at preparing students for the national university entrance examination"*. Of course, vocational skills are indispensably important for economic growth. But 'pre-vocational' courses which only serve as a supplement to general education within mainstream schools do not seem to be an efficient means to achieve that goal, if one goes by the evidence that is available from admittedly all too few empirical studies (see, e.g. various articles in Lauglo and Lillis, 1988). If training is to be school based, one needs to beware of insufficient training and of spreading it too thinly.

Governments in rich countries can afford to take the generous view that there are transferable benefits, even if high proportions of trainees end up in work unrelated to their training. This is much harder to tolerate for governments and donor agencies alike in developing countries. Any system requires routines that regularize feed-back not only about staffing, enrolment and exam results, but also on cost, the experience of trainees in the labour market, and employers' preferences and reactions. The external effectiveness of any mode of training depends not only on quality but also on labour market conditions. Work opportunities depend on effective demand, and hiring practices do not always favour those who have formal qualifications from vocational training. There is therefore good reason to monitor effective demand very closely, rather than simply to plan in order to meet targets derived from 'needs' or forecast 'requirements'.

The development of vocational training is constrained by high costs. Donor financed projects all too often leave developing countries with recurrent costs which they can ill afford; and so institutions run down until support from another donor is enlisted in order to rehabilitate and 'improve quality'. But the other management complexities make *any mode* of training harder to implement in developing countries than in the industrialized countries. The employment-based modes (apprenticeship, training in-employment) are more affordable to government but often meet with little interest and training capacity from industry, and they are very difficult to develop. Training based in specialized schools or centres, though easier to develop as 'projects', tend to be prohibitively expensive and to become run-down after donors disengage. There are no panaceas, but one cannot afford to leave expensive provisions stuck in a rut of low effectiveness. There is a need for better planning based on updated labour market information, for sustained efforts from governments and donors alike not only to implement projects and programmes but also to monitor systematically in order to redesign and adapt, and for readiness to cut one's losses when sustained efforts nonetheless fail.

In developing countries, donors add to management problems by uncritical promotion of home country models, leaving behind a patchwork of different training modes. In many countries which went through the transition to Independence from colonial rule, vocational training has been among the last areas in which a Ministry has remained strongly dependent on external professional advice. Training experts from industrialized countries have all too rarely possessed the needed skill and imagination in adapting curricula and equipment levels to local conditions, and counterpart training has often lacked real system and effort. Attention is needed to professional development of a practical kind and to incentive systems for managers and teaching staff.

It is probably an administrative advantage that vocational training be separate from school education, so that attention can be focused on the special and changing needs of training, and so that strong links can be built with the related occupational sectors. But 'separateness' is no guarantee of managerial initiative (any more than decentralization is), nor will separateness in itself bring forth extra resources. Basing training in other Ministries than Education (e.g. Labour) is one way of achieving needed separateness. But it could presumably also be achieved by a strong training division within a Ministry of Education. But regardless of where national responsibility for training is placed (a 'National Training Authority' that finances and contracts out training based in various agencies is a solution now in vogue), the endemic problems of low external efficiency, which especially school-based training provisions often suffer from, is a case for exploring ways of involving industry and commerce more directly in decisions about resource allocation and training modes and curricula – at institutional level as well as in national decision-making bodies.

An issue of increasing importance for training policies may be the tension between needs for routine and stability on the one hand, and demands for flexibility and enterprise, on the other. To develop and operate effective vocational training of a stable kind is itself costly and managerially complex. Policies concerned with the need for more 'flexible' and enterprising training organizations typically tend to assume that certain organizational changes are important preconditions: e.g., competition between institutions, finance tied to performance indicators, 'management by objectives', more responsibility to managers combined with accountability to local boards on which 'users' are strongly represented. These fresh fashions in training policy are still largely terra incognita in comparative evaluation research. But one would expect that such organizational changes will be of little avail unless both instructors and managers are well trained, carefully selected, and provided with adequate incentives (pay, promotion prospects, recognition).

In general, a dynamic organization demands more from managers and staff than one which provides training of a stable kind and scale of operation. Innovation, enterprise and professionalism do not come on the cheap. Like custom-made 'batch production' in industry compared to stable continuous process, short training courses which are tailor made for changing institutional customers are likely to have higher unit cost than stable courses; and they will generally be more professionally demanding to mount. What one can realistically expect from a training organization is contingent on pedagogic and managerial professionalism. Professionalism can be improved, but it takes time and resources to do so, and one must beware of imposing demands which so much complicate the task of managing and conducting training that they are demoralizing in their consequences. Wise policies that seek to promote enterprise and 'flexibility' are those that strike a realistic balance between what an organization is able to do and what one would like it to do.

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The book

After briefly summarizing major policy concerns and different perspectives on the relationship between training and work, this report discusses three main modes of vocational training: school-based training, apprenticeship, and training of employees. For each mode, a national case study is respectively presented: Sweden, Germany and Japan. Each country may be seen as a case in which one of these modes is relatively 'highly developed'. The aim is not to hold up these cases for emulation by others; appropriate policies in any country will depend on the national context. It is hoped, rather, that the account will highlight some of the problems which still persist when a given mode is developed under what is widely perceived internationally to have been relatively favourable circumstances.

The goal and idealogies connected with these modes and the national systems which exemplify them are discussed, the way training is conducted, is described, recent policy trends are noted and some strengths and weaknesses are assessed – including the extent to which training later leads to 'relevant work'. The modes and their respective cases are compared and contrasted and present international trends and policy 'options' are commented upon.

The author

Jon Lauglo is Director of Research, Programme for Research on Education, Research Council of Norway. During 1972-1989, he taught comparative and international education at the University of London, especially policy studies and educational planning and management. He has published works on a wide range of topics related to education in both industrialized and developing countries. He is a co-editor of Vocationalizing education: an international perspective (Pergamon, 1988). He has also published a monograph entitled: Vocational training in Tanzania and the role of Swedish support (SIDA, 1990). He has been a consultant with SIDA, NORAD, The World Bank, OECD and the Asian Development Bank. Apart from vocational training, his present academic writing focuses on comparative analysis of decentralization policies; and on the populist element in Norwegian education tradition.